

APPROVED BY DRAFTSMAN
O.G. FIG.
CLASS SUBCLASS
435 320.1

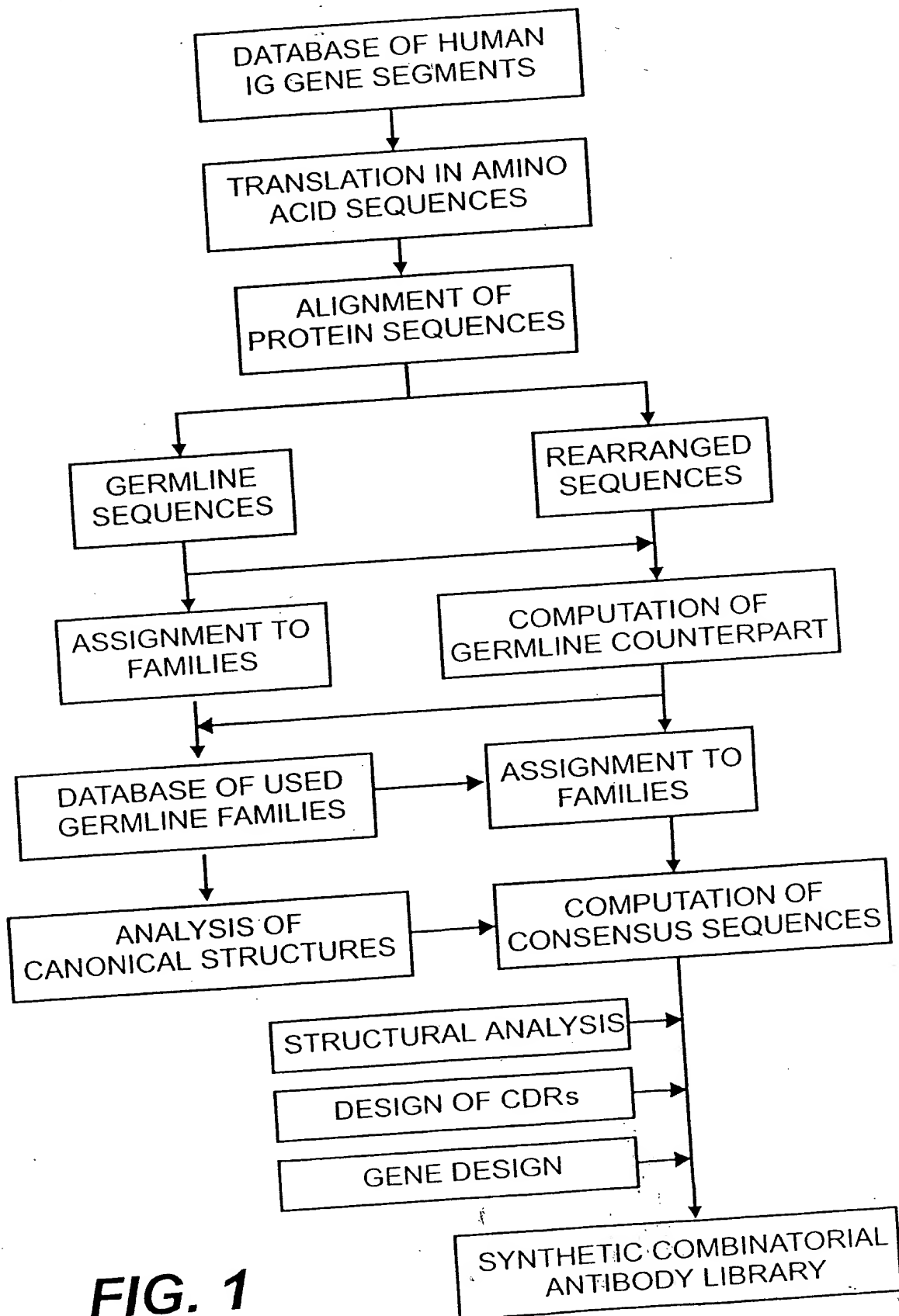


FIG. 1

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSHAH		

framework 1																				CDRI											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	A	B	C	
Vk1	D	I	Q	M	T	Q	S	P	S	S	L	S	A	S	V	G	D	R	V	T	I	T	C	R	A	S	Q	-	-	-	
Vk2	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	S	L	L	
Vk3	D	I	V	L	T	Q	S	P	A	T	L	S	L	S	P	G	E	R	A	T	L	S	C	R	A	S	Q	S	-	-	-
Vk4	D	I	V	M	T	Q	S	P	D	S	L	A	V	S	L	G	E	R	A	T	I	N	C	R	S	S	Q	S	V	L	L

CDRI										framework 2										CDR II										
D	F	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54		
Vk5	-	-	G	I	S	S	Y	L	A	W	Y	Q	Q	K	P	G	K	A	P	K	L	L	I	Y	A	A	S	S	L	
Vk6	H	S	-	N	G	Y	N	Y	L	D	W	Y	L	Q	K	P	G	Q	S	P	Q	L	L	I	Y	L	G	S	N	R
Vk7	-	-	V	S	S	S	Y	L	A	W	Y	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	G	A	S	S	R	
Vk8	Y	S	N	N	K	N	Y	L	A	W	Y	Q	Q	K	P	G	Q	P	P	K	L	L	I	Y	W	A	S	T	R	

FIG. 2A

[illegible]

FIG. 2B

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

framework 1																	CDRI													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
vλ1	Q	S	V	L	T	Q	P	P	S	-	V	S	G	A	P	G	Q	R	V	T	I	S	C	S	G	S	S	S	I	
vλ2	Q	S	A	L	T	Q	P	A	S	-	V	S	G	S	P	G	Q	S	I	T	I	S	C	T	G	T	S	S	D	V
vλ3	S	Y	E	L	T	Q	P	P	S	-	V	S	V	A	P	G	Q	T	A	R	I	S	C	S	G	D	A	-	-	L

CDRI		framework 2										CDR II																		
29		30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	
vλ1	G	S	N	-	Y	V	S	W	Y	Q	Q	L	P	G	T	A	P	K	L	L	I	Y	D	N	N	Q	R	P	S	G
vλ2	G	G	Y	N	Y	V	S	W	Y	Q	Q	H	P	G	K	A	P	K	L	M	I	Y	D	V	S	N	R	P	S	G
vλ3	G	D	K	-	Y	A	S	W	Y	Q	Q	K	P	G	Q	A	P	V	L	V	I	Y	D	D	S	D	R	P	S	G

FIG. 2C

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

framework 3	
vλ1	V P D R R F S G S K S G T S A S L A I T G L Q S E D E A D Y Y
vλ2	V S N R R F S G S K S G N T A S L T I S G L Q A E D E A D Y Y
vλ3	I P E R R F S G S N S G N T A T L T I S G T Q A E D E A D Y Y

framework 4	
vλ1	C Q Q H Y T T P P V F G G G T K L T V L G
vλ2	C Q Q H Y T T P P V F G G G T K L T V L G
vλ3	C Q Q H Y T T P P V F G G G T K L T V L G

FIG. 2D

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

framework 1																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
VH1A	Q	V	Q	L	V	Q	S	G	A	E	V	K	K	P	G	S	V	K	V
VH1B	Q	V	Q	L	V	Q	S	G	A	E	V	K	K	P	G	A	S	V	K
VH2	Q	V	Q	L	K	E	S	G	P	A	L	V	K	P	T	Q	T	L	T
VH3	E	V	Q	L	V	E	S	G	G	L	V	Q	P	G	S	L	R	L	S
VH4	Q	V	Q	L	Q	E	S	G	P	G	L	V	K	P	S	E	T	L	S
VH5	E	V	Q	L	V	Q	S	G	A	E	V	K	K	P	G	E	S	L	K
VH6	Q	V	Q	L	Q	Q	S	G	P	G	L	V	K	P	S	Q	T	L	S
	20	21	22	23	24	25	26	27	28	29	30								
	S	T	F	S	I	S	F	T	S	V	S								

framework 2										CDR II									
CDRI																			
31	A	B	C	D	E	F	G	H	I	32	A	B	C	D	E	F	G	H	I
S	-	-	Y	A	I	S	W	V	R	Q	A	P	G	Q	G	L	E	W	M
VH1A	S	-	-	Y	M	H	W	V	R	Q	A	P	G	Q	G	L	E	W	M
VH1B	T	S	G	V	G	V	G	W	I	R	Q	P	P	G	K	A	L	E	W
VH2	S	-	-	Y	A	M	S	W	V	R	Q	A	P	G	K	G	L	E	V
VH3	S	-	-	Y	Y	W	S	W	I	R	Q	P	P	G	K	G	L	E	W
VH4	S	-	-	Y	W	I	G	W	V	R	Q	M	P	G	K	G	L	E	W
VH5	S	-	-	Y	W	I	G	W	V	R	Q	M	P	G	K	G	L	E	W
	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	T	S	G	V	G	V	G	W	I	R	Q	P	P	G	K	A	L	E	W
	S	-	-	Y	A	M	S	W	V	R	Q	A	P	G	K	G	L	E	V
	S	-	-	Y	Y	W	S	W	I	R	Q	P	P	G	K	G	L	E	W
	S	-	-	Y	W	I	G	W	V	R	Q	M	P	G	K	G	L	E	W

FIG. 2E

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

VH6	SNSAAWNWIRQSPPGRGLEWLGRTYYR-SKWYNN																														
	CDRII										framework 3																				
	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	8855	
VH1A	N	Y	A	Q	K	F	Q	G	R	V	T	I	T	A	D	E	S	T	S	T	A	Y	M	E	L	S	S	L	R	S	E
VH1B	N	Y	A	Q	K	F	Q	G	R	V	T	M	T	R	D	T	S	I	S	T	A	Y	M	E	L	S	S	L	R	S	E
VH2	Y	Y	S	T	S	L	K	T	R	L	T	I	S	K	D	T	S	K	N	Q	V	V	L	T	M	T	N	M	D	P	V
VH3	Y	Y	A	D	S	V	K	G	R	F	T	I	S	R	D	N	S	K	N	T	L	Y	L	Q	M	N	S	L	R	A	E
VH4	N	Y	N	P	S	L	K	S	R	V	T	I	S	V	D	T	S	K	N	Q	F	S	L	K	L	S	S	V	T	A	A
VH5	R	Y	S	P	S	F	Q	G	Q	V	T	I	S	A	D	K	S	I	S	T	A	Y	L	Q	W	S	S	L	K	A	S
VH6	D	Y	A	V	S	V	K	S	R	I	T	I	N	P	D	T	S	K	N	Q	F	S	L	Q	L	N	S	V	T	P	E
	framework 3										CDRIII										framework 4										
	8878	8868	8860	8891	8892	8893	8894	8895	8896	8897	8898	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899	8899
VH1A	D	T	A	V	Y	Y	C	A	R	W	G	G	D	G	F	Y	A	M	D	Y	W	G	Q	G	T	L	V	T	V	S	S
VH1B	D	T	A	V	Y	Y	C	A	R	W	G	G	D	G	F	Y	A	M	D	Y	W	G	Q	G	T	L	V	T	V	S	S
VH2	D	T	A	T	Y	Y	C	A	R	W	G	G	D	G	F	Y	A	M	D	Y	W	G	Q	G	T	L	V	T	V	S	S
VH3	D	T	A	V	Y	Y	C	A	R	W	G	G	D	G	F	Y	A	M	D	Y	W	G	Q	G	T	L	V	T	V	S	S
VH4	D	T	A	V	Y	Y	C	A	R	W	G	G	D	G	F	Y	A	M	D	Y	W	G	Q	G	T	L	V	T	V	S	S

FIG. 2F

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

VH5	D	T	A	M	Y	Y	C	A	R	W	G	G	D	G	F	Y	A	M	D	Y	W	G	Q	G	T	L	V	T	V	S	S
VH6	D	T	A	V	Y	Y	C	A	R	W	G	G	D	G	F	Y	A	M	D	Y	W	G	Q	G	T	L	V	T	V	S	S

FIG. 2G

APPROVED	0.6.FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

```

.D I Q M T Q S P S S L S A S V G D
EcoRV
~~~~~
GATATCCAGA TGACCCAGAG CCCGTCTAGC CTGAGCGCGA GCGTGGGTGA
CTATAGGTCT ACTGGGTCTC GGCAGATCG GACTCGCGCT CGCACCCACT

R V T I T C R A S Q G I S S Y L
PstI
~~~~~
TCGTGTGACC ATTACCTGCA GAGCGAGCCA GGGCATTAGC AGCTATCTGG
AGCACACTGG TAATGGACGT CTCGCTCGGT CCCGTAATCG TCGATAGACC

A W Y Q Q K P G K A P K L L I Y A
KpnI SexAI AseI
~~~~~
CGTGGTACCA GCAGAAACCA GGTAAAGCAC CGAAACTATT AATTATGCA
GCACCATGGT CGTCTTTGGT CCATTTCGTG GCTTTGATAA TTAAATACGT

A S S L Q S G V P S R F S G S
SanDI BamHI
~~~~~
GCCAGCAGCT TGCAAAGCGG GGTCCCCTCC CGTTTAGCG GCTCTGGATC
CGGTCGTCGA ACGTTTCGCC CCAGGGCAGG GCAAATATCGC CGAGACCTAG

```

FIG. 3A

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

G T D F T L T I S S L Q P E D F
 Eco57I
 ~~~~~~

BamHI  
 ~~~~~~

CGGCACTGAT TTACCCCTGA CCATTAGCAG CCTGCAACCT GAAGACTTTG
 GCCGTGACTA AAATGGGACT GGTAATCGTC GGACGTTGGA CTTCTGAAAC

A T Y Y C Q Q H Y T T P P T F G Q
 MscI
 ~~~~~~

CGACCTATTA TTGCCAGCAG CATTATACCA CCCC GCCGAC CTTTGCCAG  
 GCTGGATAAT AACGGTCGTC GTAATATGGT GGGCGGCTG GAAACCGGTC

G T K V E I K R T  
 BsiWI  
 ~~~~~~

GGTACGAAAG TTGAAATTAA ACGTACG
 CCATGCTTTC AACTTTAATT TGCATGC

FIG. 3B

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

D I V M T Q S P L S L P V T P G E
 EcoRV BanII
 ~~~~~  
 GATATCGTGA TGACCCAGAG CCCACTGAGC CTGCCAGTGA CTCCGGGCGA  
 CTATAGCACT ACTGGGTCTC GGTGACTCG GACGGTCACT GAGGCCCGCT  
  
 P A S I S C R S S Q S L L H S N  
 PstI  
 ~~~~~  
 GCCTGCGAGC ATTAGCTGCA GAAGCAGCCA AAGCCTGCTG CATAAGCAACG
 CGGACGCTCG TAATCGACGT CTTGTCGGT TTCGGACGAC GTATCGTTGC

 G Y N Y L D W Y L Q K P G Q S P Q
 KpnI SexAI
 ~~~~~  
 GCTATAACTA TCTGGATTGG TACCTTCAAA AACCAGGTCA AAGCCCGCAG  
 CGATATTGAT AGACCTAACC ATGGAAGTTT TTGGTCCAGT TTCGGGCGTC

**FIG. 3C**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

L L I Y L G S N R A S G V P D R F

AseI

SaDI

~~~~~

CTATTAATTT ATCTGGGCAG CAACCGTGCC AGTGGGGTCC CGGATCGTTT
 GATAATTAAA TAGACCCGTC GTTGGCACGG TCACCCACAG GCCTAGCAAA

S G S G S G T D F T L K I S R V

BamHI

~~~~~

TAGCGGCTCT GGATCCGGCA CCGATTTTAC CCTGAAAATT AGCCGTGTGG  
 ATCGCCGAGA CCTAGGCCGT GGCTAAAATG GGACTTTTAA TCGGCACACC

E A E D V G V Y Y C Q Q H Y T T P

Eco57I

~~~~~

BbsI

~~~~~

AAGCTGAAGA CGTGGGCGTG TATTATTGCC AGCAGCATTA TACCACCCCG  
 TTCGACTTCT GCACCCGCAC ATAATAACGG TCGTCGTAAT ATGGTGGGGC

**FIG. 3D**



|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

P T F G Q G T K V E I K R T  
MscI BsiWI  
~~~~~  
CCGACCTTTG GCCAGGGTAC GAAAGTTGAA ATTAAACGTA CG
GGCTGGAAC CGGTCCCATG CTTTCAACTT TAATTGTCAT GC

FIG. 3E

~~~~~  
GATATCGTGC TGACCCAGAG CCCGGCGACC CTGAGCCTGT CTCGGGGCGGA  
CTATAGCAG ACTGGTCTC GGGCCGCTGG GACTCGGACA GAGGCCCGGCT

ACGTGCGACC CTGAGCTGCA GAGCGAGCCA GAGCGTGAGC AGCAGCTATC  
TGCACGCTGG GACTCGACGT CTCGCTCGGT CTCGCACTCG TCGTCGATAG

L A W Y Q Q K P G Q A P R L I Y  
KpnI SexAI AseI

**FIG. 3F**

|           |           |
|-----------|-----------|
| APPROVED  | O.G. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |

TGGCGTGGTA CCAGCAGAAA CCAGGTCAAG CACCGCGTCT ATTAATTAT  
 ACCGCACCAT GGTCGTCTTT GTCCAGTTC GTGGCGCAGA TAATTAAATA

G A S S R A T G V P A R F S G S G  
 BamHI

SanDI

~~~~~

GGCGGAGCA GCCGTGCAAC TGGGGTCCCG GCGCGTTTA GCGGCTCTGG
 CCGCGCTCGT CGGCACGTTG ACCCCAGGGC CGCGCAAAT CGCCGAGACC

S G T D F T L T I S S L E P E D
 Eco57I

~~~~~

BamHI

BbsI

~~~~~

ATCCGGCAG GATTTACCC TGACCATTAG CAGCCTGGAA CCTGAAGACT
 TAGGCCGTGC CTAAATGGG ACTGGTAATC GTCGGACCTT GGAATTCTGA

FIG. 3G

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

F	A	V	Y	Y	C	Q	Q	H	Y	T	T	P	P	T	F	G
TTGCGGTGTA TTATTGCCAG CAGCATTATA CCACCCCGCC GACCTTTGGC AACGCCACAT AATAACGGTC GTCGTAATAT GGTGGGGCGG CTGGAACCCG MSCI ~~~~ Q G T K V E I K R T MSCI BsiWI ~~~~ CAGGGTACGA AAGTTGAAAT TAAACGTACG GTCCCATGCT TTCAACTTTA ATTTGCATGC																

FIG. 3H

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

D I V M T Q S P D S L A V S L G E
 EcoRV
 ~~~~~  
 BanII  
 ~~~~~  
 GATATCGTGA TGACCCAGAG CCCGGATAGC CTGGCGGTGA GCCTGGGCGA
 CTATAGCACT ACTGGGTCTC GGGCCTATCG GACCGCCACT CGGACCCGCT

 R A T I N C R S S Q S V L Y S S
 PstI
 ~~~~~  
 ACGTGCAGCC ATTAAGTGA GAAGCAGCCA GAGCGTGCTG TATAGCAGCA  
 TGCACGCTGG TAATTGACGT CTTCGTCGGT CTCGCACGAC ATATCGTCGT  
  
 N N K N Y L A W Y Q Q K P G Q P P  
 KpnI  
 ~~~~~  
 SexAI
 ~~~~~  
 ACAACAAAA CTATCTGGCG TGGTACCAGC AGAAACCAGG TCAGCCGCCG  
 TGTGTTTTT GATAGACCGC ACCATGGTCC TCTTTGGTCC AGTCGGCGGC

**FIG. 31**

K L L I Y W A S T R E S G V P D R

AseI

SanDI

~~~~~

AAACTATTAA TTTATTGGGC ATCCACCCGT GAAAGCGGG TCCCGGATCG
 TTGATAATT AAATAACCCG TAGGTGGCA CTTTCGCCCC AGGCCTAGC

F S G S G S G T D F T L T I S S

BamHI

~~~~~

TTTTCGCGC TCTGGATCCG GCACTGATT TACCCTGACC ATTTCGTCCC  
 AAAATCGCCG AGACCTAGGC CGTGACTAAA ATGGGACTGG TAAAGCAGGG

L Q A E D V A V Y Y C Q Q H Y T T

Eco57I

~~~~~

BbsI

~~~~~

FIG. 3J

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

TGCAAGCTGA AGACGTGGCG GTGTATTATT GCCAGCAGCA TTATACCACC  
 ACGTTCGACT TCTGCACCGC CACATAATAA CGGTCGTCGT AATATGGTGG

|            |            |            |            |       |   |   |   |   |   |   |   |   |   |   |
|------------|------------|------------|------------|-------|---|---|---|---|---|---|---|---|---|---|
| P          | P          | T          | F          | G     | Q | G | T | K | V | E | I | K | R | T |
| MscI       |            |            |            |       |   |   |   |   |   |   |   |   |   |   |
| ~~~~~      |            |            |            |       |   |   |   |   |   |   |   |   |   |   |
| BsiWI      |            |            |            |       |   |   |   |   |   |   |   |   |   |   |
| ~~~~~      |            |            |            |       |   |   |   |   |   |   |   |   |   |   |
| CCGCCGACCT | TTGGCCAGGG | TACGAAAGTT | GAAATTAAAC | GTACG |   |   |   |   |   |   |   |   |   |   |
| GGCGGCTGGA | AACCGGTCCC | ATGCTTTCAA | CTTTAATTG  | CATGC |   |   |   |   |   |   |   |   |   |   |

**FIG. 3K**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

Q S V L T Q P P S V S G A P G Q R  
 SexAI

CAGAGCGTGC TGACCCAGCC GCCTTCAGTG AGTGGCGCAC CAGTCAGCG  
 GTCTCGCACG ACTGGGTCGG CGGAAGTCAC TCACCGCGTG GTCCAGTCGC  
 Eco57I  
 ~~~~~

V T I S C S G S S S N I G S N Y
 BssSI
 ~~~~~

TGTGACCATC TCGTGTAGCG GCAGCAGCAG CAACATTGGC AGCAACTATG  
 ACACGGGTAG AGCACATCGC CGTCGTCGTC GTTGTAACCG TCGTTGATAC

V S W Y Q Q L P G T A P K L L I Y  
 KpnI XmaI BbeI  
 ~~~~~

TGAGCTGGTA CCAGCAGTTG CCCGGGACGG CGCCGAAACT GCTGATTTAT
 ACTCGACCAT GGTCGTCAAC GGGCCCTGCC GCGGCTTTGA CGACTAAATA

FIG. 4A

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

D	N	N	Q	R	P	S	G	V	P	D	R	F	S	G	S	K
<div style="display: flex; justify-content: space-between;"> Bsu36I BamHI </div>																
~~~~~																
GATAACAACC	AGCGTCCCCTC	AGGCGTGCCG	GATCGTTT	TA	GCGGATCCAA											
CTATTGTTGG	TCGCAGGGAG	TCCGCACGGC	CTAGCAAAT	AT	CGCCTAGGTT											
~~~~~																
S	G	T	S	A	S	L	A	I	T	G	L	Q	S	E	D	
<div style="display: flex; justify-content: space-between;"> BbsI </div>																
~~~~~																
AAGCGGCACC	AGCGCGAGCC	TTGCGATTAC	GGGCCTGCAA	AGCGAAGACG												
TTCGCCGTGG	TCGCGCTCGG	AACGCTAATG	CCCGGACGTT	TCGCTTCTGC												
~~~~~																
E	A	D	Y	Y	C	Q	Q	H	Y	T	T	P	P	V	F	G
AAGCGGATTA	TTATTGCCAG	CAGCATTATA	CCACCCCGCC	TGTGTTTGGC												
TTCGCCCTAAT	AATAACGGTC	GTCGTAATAT	GGTGGGCGG	ACACAAACCG												

FIG. 4B

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

G G T K L T V L G
 HpaI MscI
           ~~~~~  
 GCGGCACGA AGTTAACCGT TCTTGGC  
 CCGCCGTGCT TCAATTGGCA AGAACCG

**FIG. 4C**

APPROVED	C.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

Q S A L T Q P A S V S G S P G Q S  
 SexAI  
 ~~~~~

CAGAGGCAC TGACCCAGCC AGCTTCAGTG AGCGGCTCAC CAGGTCAGAG
 GTCTCGCGTG ACTGGGTCGG TCGAAGTCAC TCGCCGAGTG GTCCAGTCTC
 Eco57I
 ~~~~~

I T I S C T G T S S D V G G Y N  
 BssSI  
 ~~~~~

CATTACCATC TCGTGTACGG GTACTAGCAG CGATGTGGGC GGCTATAACT
 GTAATGGTAG AGCACATGCC CATGATCGTC GCTACACCCG CCGATATTGA

Y V S W Y Q Q H P G K A P K L M I
 KpnI XmaI BbeI
 ~~~~~

ATGTGAGCTG GTACCAGCAG CATCCCGGGA AGGCGCCGAA ACTGATGATT  
 TACACTCGAC CATGGTCGTC GTAGGGCCCT TCCGCGGCTT TGACTACTAA

**FIG. 4D**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

Y D V S N R P S G V S N R F S G S  
 Bsu36I BamHI  
 ~~~~~  
 TATGATGTGA GCAACCGTCC CTCAGGCGTG AGCAACCGTT TTAGCGGATC
 ATACTACACT CGTTGGCAGG GAGTCCGCAC TCGTTGGCAA AATCGCCTAG
 K S G N T A S L T I S G L Q A E
 BamHI BbsI
 ~~~~~  
 CAAAAGCGC AACACCGCGA GCCTGACCAT TAGCGGCCGT CAAGCGGAAG  
 GTTTTCGCCG TTGTGGCGCT CGGACTGGTA ATCGCCGGAC GTTCGCCCTTC  
 D E A D Y Y C Q Q H Y T T P P V F  
 BbsI  
 ~~~~~  
 ACGAAGCGGA TTATTATTGC CAGCAGCATT ATACCACCCC GCCTGTGTTT
 TGCTTCGCCT AATAATAACG GTCGTCGTAA TATGTTGGG CGGACACAAA

FIG. 4E

| | |
|-----------|-----------|
| APPROVED | 0 G. FIG. |
| DY | CLASS |
| DRAFTSMAN | SUBCLASS |

G G G T K L T V L G
 HpaI MscI
 ~~~~~  
 GGCGGCGGCA CGAAGTTAAC CGTTCTTTGGC  
 CCGCCGCCGT GCTTCAATTG GCAAGAACC

**FIG. 4F**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

S Y E L T Q P P S V S V A P G Q T  
 SexAI

~~~~~  
 AGCTATGAAC TGACCCAGCC GCCTTCAGTG AGCGTTGCAC CAGGTCAGAC
 TCGATACTTG ACTGGGTCGG CGGAAGTCAC TCGCAACGTG GTCCAGTCTG
 Eco57I

~~~~~

A R I S C S G D A L G D K Y A S  
 BssSI

~~~~~

CGGCGGTATC TCGTGTAGCG GCGATGCGCT GGGCGATAAA TACGCGAGCT
 GCGCGCATAG AGCACATCGC CGCTACGCCA CCCGCTATTT ATGCGCTCGA

W Y Q Q K P G Q A P V L V I Y D D
 KpnI XmaI BbeI
 ~~~~~

FIG. 4G

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

GGTACCAGCA GAAACCCGGG CAGGCGCCAG TTCTGGTGAT TTATGATGAT  
 CCATGGTCGT CTTTGGGCCC GTCCGGGGTC AAGACCACTA AATACTACTA

S D R P S G I P E R F S G S N S G

Bsu36I

BamHI

~~~~~

~~~~~

TCTGACCGTC CCTCAGGCAT CCCGGAACGC TTAGCGGAT CCAACAGCGG  
 AGACTGGCAG GGAGTCCGTA GGCCTTGCG AAATCGCCTA GGTGTGCGCC

N T A T L T I S G T Q A E D E A

BbsI

~~~~~

FIG. 4H

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

CAACACCGCG ACCCTGACCA TTAGCGGCAC TCAGGCGGAA GACGAAGCGG
 GTGTGGCGC TGGGACTGGT AATCGCCGTG AGTCCGCCCT CTGCTTCGCC

D Y Y C Q Q H Y T T P P V F G G G
 ATTATTATTG CCAGCAGCAT TATACCACCC CGCCTGTGTT TGGCGCGGC
 TAAATAAATAC GGTCGTCGTA ATATGGTGGG GCGGACACAA ACCGCCGCCG

T K L T V L G
 HpaI MscI
 ~~~~~  
 ACGAAGTTAA CCGTTCCTGG C  
 TGCTTCAATT GGCAAGAACC G

**FIG. 4I**



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

Q V Q L V Q S G A E V K K P G S S  
 MfeI

~~~~~  
 CAGGTGCAAT TGGTTCAGTC TGGCGCGGAA GTGAAAAAAC CGGGCAGCAG
 GTCCACGTTA ACCAAGTCAG ACCGCGCCTT CACTTTTTTG GCCCGTCGTC

V K V S C K A S G G T F S S Y A
 BspEI

~~~~~  
 CGTGAAAGTG AGCTGCAAG CCTCCGGAGG CACTTTTAGC AGCTATGCCA  
 GCACTTTCAC TCGACGTTTC GGAGGCCTCC GTGAAAAATCG TCGATACGCT

I S W V R Q A P G Q G L E W M G G  
 BstXI XhoI

~~~~~  
 TTAGCTGGGT GCGCCAAGCC CCTGGGCAGG GTCTCGAGTG GATGGGCGGC
 AATCGACCCA CGCGGTTCCG GGACCCGTC CAGAGCTCAC CTACCCGCCG

FIG. 5A

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

```

I I P I F G T A N Y A Q K F Q G R
ATTATTCCGA TTTTGGCAC GCGAACTAC GCGAGAAGT TTCAGGGCCG
TAATAAGGCT AAAAACCGTG CCGCTTGATG CCGTCTTCA AAGTCCCGGC

V T I T A D E S T S T A Y M E L
BstEII
~~~~~
GGTGACCAT ACCGCGGATG AAAGCACCCAG CACCGCGTAT ATGGAAGTGA
CCACTGGTAA TGGCGCCTAC TTTCGTGGTC GTGGCGCATA TACCTTGACT

S S L R S E D T A V Y Y C A R W G
EagI
~~~~~
BssHII
~~~~~
GCAGCCTGCG TAGCGAAGAT ACGGCCGTGT ATTATTGCGC GCGTTGGGC
CGTCGGACGC ATCGCTTCTA TGCCGGCACA TAATAACGCG CGCAACCCCG

```

FIG. 5B

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

G D G F Y A M D Y W G Q G T L V T

Styl

~~~~~

GGCGATGGCT TTTATGCGAT GGATTATTGG GGCCAAGGCA CCCTGGTGAC  
 CCGCTACCGA AAATACGCTA CCTAATAACC CCGGTTCCGT GGGACCACTG

V S S

BlpI

~~~~~

GGTTAGCTCA G
 CCAATCGAGT C

FIG. 5C

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

Q V Q Q L V Q S G A E V K K P G A S
 MfeI

~~~~~

CAGGTGCAAT TGGTTCAGAG CGGCGCGGAA GTGAAAAAAC CGGGCGCGGAG  
 GTCCACGTTA ACCAAGTCTC GCCGCGCCTT CACTTTTGTG GCCCGCGCTC

V K V S C K A S G Y T F T S Y Y

BspEI

~~~~~

CGTGAAAGTG AGCTGCAAG CCTCCGGATA TACCTTTACC AGCTATTATA
 GCACTTTCAC TCGACGTTTC GGAGGCCTAT ATGGAATGG TCGATAATAT

M H W V R Q A P G Q G L E W M G W

BstXI

XhoI

~~~~~

~~~~~

TGCACTGGGT CCGCCAAGCC CCTGGGCAGG GTCTCGAGTG GATGGGCTGG
 ACGTGACCCA GGCGGTTTCG GGACCCGTC CAGAGCTCAC CTACCCGACC

FIG. 5D

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSHAH | | |

I N P N S G G T N Y A Q K F Q G R
ATTAACCCGA ATAGCGGCGG CACGAAC TAC GCGAGAAGT TTCAGGGCCG
TAATTGGGCT TATCGCCGCC GTGCTTGATG CGCGTCTTCA AAGTCCCCGGC

V T M T R D T S I S T A Y M E L
BstEII
~~~~~  
GGTGACCATG ACCCGTGATA CCAGCAT TAG CACCGCGTAT ATGGAAC TGA  
CCACTGGTAC TGGGCACTAT GTCGTAATC GTGGCGCATA TACCTTGACT

S S L R S E D T A V Y C A R W G  
EagI BssHII  
~~~~~  
GCAGCCTGCG TAGCGAAGAT ACGGCCGTGT ATTATTGCGC GCGTTGGGGC
CGTCGGACGC ATCGCTTCTA TGCCGGCACA TAATAACGCG CGCAACCCCCG

FIG. 5E

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

G D G F Y A M D Y W G Q G T L V T

StyI

~~~~~

GGCGATGGCT TTTATGCGAT GGATTATTGG GGCCAAGGCA CCCTGGTGAC  
 CCGCTACCGA AAATACGCTA CCTAATAACC CCGGTTCCGT GGGACCACTG

V S S

BlpI

~~~~~

GGTTAGCTCA G
 CCAATCGAGT C

FIG. 5F

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

Q V Q Q L K E S G P A L V K P T Q T
 MfeI

~~~~~

CAGGTGCAAT TGAAGAAAG CGGCCCGGCC CTGGTGAAC CGACCCAAAC  
 GTCCACGTA ACTTCTTTC GCCGGGCCGG GACCACTTG GCTGGGTTTG

L T L T C T F S G F S L S T S G  
 BspEI

~~~~~

CCTGACCCCTG ACCTGTACCT TTTCCGGATT TAGCCTGTCC ACGTCTGGCG
 GGA CTGGGAC TGGACATGGA AAAGGCCCTAA ATCGGACAGG TGCAGACCGC

V G V G W I R Q P P G K A L E W L
 BstXI XhoI

~~~~~

TTGGCGTGGG CTGGATTGCG CAGCCGCCCTG GGAAAGCCCT CGAGTGGCTG  
 AACCGCACCC GACCTAAGCG GTCGGCGGAC CCTTTCGGGA GCTCACCGAC

FIG. 5G

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

```

A L I D W D D D K Y Y S T S L K T
MluI

GCTCTGATTG ATTGGGATGA TGATAAGTAT TATAGCACCA GCCTGAAAAC
CGAGACTAAC TAACCCTACT ACTATTCTATA ATATCGTGGT CGGACTTTTG

R L T I S K D T S K N Q V V L T
MluI
~~~~~
NspV
~~~~~
GCGTCTGACC ATTAGCAAAG ATACTTCGAA AAATCAGGTG GTGCTGACTA
CGCAGACTGG TAATCGTTTC TATGAAGCTT TTTAGTCCAC CACGACTGAT

M T N M D P V D T A T Y Y C A R W
BssHII
~~~~~
TGACCAACAT GGACCCGGTG GATACGGCCA CCTATTATTG CGCGCGTTGG
ACTGGTTGTA CCTGGGCCAC CTATGCCGGT GGATAATAAC GCGGCAACC

```

**FIG. 5H**



|           |           |          |
|-----------|-----------|----------|
| APPROVED  | D.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

G G D G F Y A M D Y W G Q G T L V

Styl

~~~~~

GGCGGCGATG GCTTTTATGC GATGATTAT TGGGGCCAAG GCACCCCTGGT  
 CCGCCGCTAC CGAAATACG CTACCTAATA ACCCCGGTTC CGTGGGACCA

T V S S

BlpI

~~~~~

GACGGTTAGC TCAG  
 CTGCCAATCG AGTC

**FIG. 5I**

|                     |       |          |
|---------------------|-------|----------|
| APPROVED 10.0. FIG. |       |          |
| BY                  | CLASS | SUBCLASS |
| DRAFTSMAN           |       |          |

```

E V Q L V E S G G G L V Q P G G S
MfeI
~~~~~
GAAGTGCAAT TGGTGGAAG CGGCGGCGGC CTGGTGCAAC CGGGCGGCAG
CTTCACGTTA ACCACCTTC GCCGCCGCCG GACCACGTTG GCCCGCCGTC

L R L S C A A S G F T F S S Y A
BspEI
~~~~~
CCTGCGTCTG AGCTGCGCGG CCTCCGGATT TACCTTTAGC AGCTATGCCA
GGACGCAGAC TCGACGCGCC GGAGGCCCTAA ATGGAATCG TCGATACGCT

M S W V R Q A P G K G L E W V S A
BstXI
~~~~~
XhoI
~~~~~
TGAGCTGGGT GCGCCAAGCC CCTGGGAAGG GTCTCGAGTG GGTGAGCGCG
ACTCGACCCA CGCGGTTTCG GGACCCTTCC CAGAGCTCAC CCACTCGCGC

```

**FIG. 5J**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

I S G S G G S T Y Y A D S V K G R  
 ATTAGCGGTA GCGGCGGCAG CACCTATTAT GCGGATAGCG TGAAGGCCCG  
 TAATCGCCAT CGCCGCCGTC GTGGATAATA CGCCTATCGC ACTTCCCGGC

F T I S R D N S K N T L Y L Q M

PmlI NspV

~~~~~

TTTTACCATT TCACGTGATA ATTCGAAAA CACCCTGTAT CTGCAAATGA  
 AAAATGGTAA AGTGCACTAT TAAGCTTTT GTGGGACATA GACGTTTACT

N S L R A E D T A V Y Y C A R W G

EagI BssHII

~~~~~

ACAGCCTGCG TCGGAAGAT ACGGCCGTGT ATTATTGCGC GCGTTGGGGC  
 TGTCGGACGC ACGCCTTCTA TGCCGGCACA TAATAACGCG CGCAACCCCG

**FIG. 5K**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

G D G F Y A M D Y W G Q G T L V T

StyI

~~~~~

GGCGATGGCT TTTATGCGAT GGATTATTGG GGCCAAGGCA CCCTGGTGAC  
 CCGCTACCGA AAATACGCTA CCTAATAACC CCGGTTCCGT GGGACCACTG

V S S

BlpI

~~~~~

GGTAGCTCA G  
 CCAATCGAGT C

**FIG. 5L**

|           |          |          |
|-----------|----------|----------|
| APPROVED  | O.G.FIG. |          |
| BY        | CLASS    | SUBCLASS |
| DRAFTSMAN |          |          |

Q V Q L Q E S G P G L V K P S E T

MfeI

~~~~~

CAGGTGCAAT TGCAAGAAAG TGGTCCGGGC CTGGTGAAC CGAGCGAAAC  
 GTCCACGTTA ACGTTCTTTC ACCAGGCCCG GACCACCTTG GCTCGCTTTG

L S L T C T V S G G S I S S Y Y

BspEI

~~~~~

CCTGAGCCTG ACCTGCACCG TTTCCGGAGG CAGCATTAGC AGCTATTATT  
 GGA CTCGGAC TGGACGTGGC AAAGGCCCTCC GTCGTAATCG TCGATAATAA

W S W I R Q P P G K G L E W I G Y

BstXI

XhoI

~~~~~

~~~~~

**FIG. 5M**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

```

GGAGCTGGAT TCGCCAGCCG CCTGGAAGG GTCTCGAGTG GATTGGCTAT
CCTCGACCTA AGCGGTCGGC GGACCCTTCC CAGAGCTCAC CTAACCGATA

I Y Y S G S T N Y N P S L K S R V
BstEII ~~~

ATTATTATA GCGGCAGCAC CAACTATAAT CCGAGCCTGA AAAGCCGGGT
TAAATAATAT CGCCGTCGTG GTTGATATTA GGCTCGGACT TTTCGGCCCCA

T I S V D T S K N Q F S L K L S
BstEII NspV
~~~~~

GACCATTAGC GTTGATACTT CGAAAACCA GTTAGCCTG AAAC TGAGCA
CTGGTAATCG CAACTATGAA GCTTTTGGT CAAATCGGAC TTGACTCGT

S V T A A D T A V Y Y C A R W G G
EagI BssHII
~~~~~

```

**FIG. 5N**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

GCGTGACGGC GCGGATACG GCCGTGTATT ATTGCGCGCG TTGGGGCGGC  
 CGCACTGCCG CCGCCTATGC CGGCACATAA TAACGCGCGC AACCCCGCCG

D G F Y A M D Y W G Q G T L V T V

StyI

~~~~~

GATGGCTTTT ATGCGATGGA TTATTGGGGC CAAGGCACCC TGGTGACGGT  
 CTACCGAAAA TACGCTACCT AATAACCCCG GTTCCGTGGG ACCACTGCCA

S S

BlpI

~~~~~

TAGCTCAG  
 ATCGAGTC

**FIG. 50**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

E V Q L V Q S G A E V K K P G E S

MfeI

~~~~~

GAAGTGCAAT TGGTTCAGAG CGGCGCGGAA GTGAAAAAAC CGGGCGAAAG  
 CTCACGTTA ACCAAGTCTC GCCGCGCCTT CACTTTTTTG GCCCGCTTTC

L K I S C K G S G Y S F T S Y W

BspEI

~~~~~

CCTGAAAT AGCTGCAAG GTTCCGGATA TTCCTTTACG AGCTATTGGA  
 GGACTTTTAA TCGACGTTTC CAAGGCCCTAT AAGGAAATGC TCGATAACCT

I G W V R Q M P G K G L E W M G I

BstXI

XhoI

~~~~~

~~~~~

TTGGCTGGGT GCGCCAGATG CCTGGGAAGG GTCTCGAGTG GATGGGCATT  
 AACCGACCCA CGCGGTCTAC GGACCCTTCC CAGAGCTCAC CTACCCGTAA

**FIG. 5P**



|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

I Y P G D S D T R Y S P S F Q G Q  
 ATTATCCGG GCGATAGCGA TACCCGTTAT TCTCCGAGCT TTCAGGGCCA  
 TAAATAGGCC CGCTATCGCT ATGGGCAATA AGAGGCTCGA AAGTCCCGGT

V T I S A D K S I S T A Y L Q W

BstEII

~~~~~

GGTGACCAT T AGCGCGGATA AAAGCATTAG CACCGCGTAT CTTCAATGGA  
 CCACTGGTAA TCGCGCCTAT TTTCGTAATC GTGGCGCATA GAAGTTACCT

S S L K A S D T A M Y Y C A R W G

BssHII

~~~~~

GCAGCCTGAA AGCGAGCGAT ACGGCCATGT ATTATTGCGC GCGTTGGGC  
 CGTCGGACTT TCGCTCGCTA TGCCGGTACA TAATAACGCG CGCAACCCCG

**FIG.5Q**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

G D G F Y A M D Y W G Q G T L V T

StyI

~~~~~

GGCGATGGCT TTTATGCGAT GGATTATTGG GGCCAAGGCA CCCTGGTGAC  
 CCGCTACCGA AAATACGCTA CCTAATAACC CCGTTCCGT GGGACCACTG

V S S

BlpI

~~~~~

GGTAGCTCA G  
 CCAATCGAGT C

**FIG.5R**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | D.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

Q V Q Q L Q Q S G P G L V K P S Q T  
 MfeI  
 ~~~~~  
 CAGGTGCAAT TGCAACAGTC TGGTCCGGGC CTGGTGAAC CGAGCCAAAC  
 GTCCACGTTA ACGTTGTCAG ACCAGGCCCG GACCACCTTG GCTCGGTTTG  
  
 L S L T C A I S G D S V S S N S  
 BspEI  
 ~~~~~  
 CCTGAGCCTG ACCTGTGCGA TTCCCGGAGA TAGCGTGAGC AGCAACAGCG  
 GGA CTCGGAC TGGACACGCT AAAGGCCCTCT ATCGCACTCG TCGTTGTGCG  
  
 A A W N W I R Q S P G R G L E W L  
 BstXI XhoI  
 ~~~~~  
 CGGCGTGGAA CTGGATTGCG CAGTCTCCTG GCGTGGCCT CGAGTGGCTG  
 GCCGCACCTT GACCTAAGCG GTCAGAGGAC CCGCACCGGA GCTCACCGAC

FIG.5S

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

```

G R T Y Y R S K W Y N D Y A V S V
GGCCGTACCT ATTATCGTAG CAAATGGTAT AACGATTATG CCGTGAGCGT
CCGGCATGGA TAATAGCATC GTTACCATA TTGCTAATAC GCCACTCGCA

K S R I T I N P D T S K N Q F S
 BsaBI NspV
      ~~~~~~      ~~~~~~
GAAAAGCCGG ATTACCATCA ACCCGGATAC TTCGAAAAC CAGTTTAGCC
CTTTTCGGCC TAATGGTAGT TGGCCTATG AAGCTTTTG GTCAAATCGG

L Q L N S V T P E D T A V Y Y C A
      EagI      BssHII
      ~~~~~~      ~~~~~~
TGCAACTGAA CAGCGTGACC CCGGAAGATA CGGCCGTGTA TTATTGCGCG
ACGTTGACTT GTCGCACTGG GGCCTTCTAT GCCGGCACAT AATAACGCGC

```

**FIG. 5T**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

R W G G D G F Y A M D Y W G Q G T  
 BSSHII  
 ~  
 CGTTGGGGCG GCGATGGCTT TTATGCGATG GATTATTGGG GCCAAGGCAC  
 GCAACCCCGC CGCTACCGAA AATACGCTAC CTAATAACCC CGTTCCGTG

Styl  
 ~~~~~

L V T V S S  
 BlpI  
 ~~~~~  
 CCTGGTGACG GTTAGCTCAG  
 GGACCACTGC CAATCGAGTC

**FIG. 5U**

**O1K1** 5' - GAATGCATACGCTGATATCCAGATGACCCAGAG -  
 CCCGTCTAGCCTGAGC -3'

**O1K2** 5' - CGCTCTGCAGGTAATGGTCACACGATCACCCAC -  
 GCTCGCGCTCAGGCTAGACGGGC -3'

**O1K3** 5' - GACCATTACCTGCAGAGCGAGCCAGGGCATTAG -  
 CAGCTATCTGGCGTGGTACCAGCAG -3'

**O1K4** 5' - CTTTGCAAGCTGCTGGCTGCATAAATTAATAGT -  
 TTCGGTGCTTTACCTGGTTTCTGCTGGTACCACGCCAG -3'

**O1K5** 5' - CAGCCAGCAGCTTGCAAAGCGGGGTCCCGTCCC -  
 GTTTTAGCGGCTCTGGATCCGGCACTGATTTTAC -3'

**O1K6** 5' - GATAATAGGTCGCAAAGTCTTCAGGTTGCAGGC -  
 TGCTAATGGTCAGGGTAAAATCAGTGCCGGATCC -3'

**O2K1** 5' - CGATATCGTGATGACCCAGAGCCCACTGAGCCT -  
 GCCAGTGACTCCGGGCGAGCC -3'

**O2K2** 5' - GCCGTTGCTATGCAGCAGGCTTTGGCTGCTTCT -  
 GCAGCTAATGCTCGCAGGCTCGCCCGGAGTCAC -3'

**O2K3** 5' - CTGCTGCATAGCAACGGCTATAACTATCTGGAT -  
 TGGTACCTTCAAAAACCAGGTCAAAGCCC -3'

**O2K4** 5' - CGATCCGGGACCCCACTGGCACGGTTGCTGCCC -  
 AGATAAATTAATAGCTGCGGGCTTTGACCTGGTTTTTG -3'

**O2K5** 5' - AGTGGGGTCCCGGATCGTTTTAGCGGCTCTGGA -  
 TCCGGCACCGATTTTACCCTGAAAATTAGCCGTGTG -3'

**O2K6** 5' - CCATGCAATAATACACGCCACGTCTTCAGCTT -  
 CCACACGGCTAATTTTCAGGG -3'

**O3K1** 5' - GAATGCATACGCTGATATCGTGCTGACCCAGAG  
 CCCGG -3'

**O3K2** 5' - CGCTCTGCAGCTCAGGGTCGCACGTTGCCCCG -  
 AGACAGGCTCAGGGTCGCCGGGCTCTGGGTCAGC -3'

**O3K3** 5' - CCCTGAGCTGCAGAGCGAGCCAGAGCGTGAGCA -  
 GCAGCTATCTGGCGTGGTACCAG -3'

**FIG. 6A**

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY	DRAFTSMAN	

**O3K4** 5' - GCACGGCTGCTCGCGCCATAAATTAATAGACGC -  
 GGTGCTTGACCTGGTTTCTGCTGGTACCACGCCAGATAG -3'

**O3K5** 5' - GCGCGAGCAGCCGTGCAACTGGGGTCCCCGGCGC -  
 GTTTTAGCGGCTCTGGATCCGGCACGGATTTTAC -3'

**O3K6** 5' - GATAATACACCGCAAAGTCTTCAGGTTCCAGGC -  
 TGCTAATGGTCAGGGTAAAATCCGTGCCGGATC -3'

**O4K1** 5' - GAATGCATACGCTGATATCGTGATGACCCAGAG -  
 CCCGGATAGCCTGGCG -3'

**O4K2** 5' - GCTTCTGCAGTTAATGGTCGCACGTTTCGCCCAG -  
 GCTACCGCCAGGCTATCCGGGC -3'

**O4K3** 5' - CGACCATTAAGTGCAGAAGCAGCCAGAGCGTGC -  
 TGTATAGCAGCAACAACAAAACTATCTGGCGTGGTACCAG  
 3'

**O4K4** 5' - GATGCCCAATAAATTAATAGTTTTCGGCGGCTGA -  
 CCTGGTTTCTGCTGGTACCACGCCAGATAG -3'

**O4K5** 5' - AAATATTAATTTATTGGGCATCCACCCGTGAA -  
 AGCGGGGTCCCCGGATCGTTTTAGCGGCTCTGGATCCGGCAC -  
 3'

**O4K6** 5' - GATAATACACCGCCACGTCTTCAGCTTGCAGGG -  
 ACGAAATGGTCAGGGTAAAATCAGTGCCGGATCCAGAGCC -  
 3'

**O1L1** 5' - GAATGCATACGCTCAGAGCGTGCTGACCCAGCC -  
 GCCTTCAGTGAGTGG -3'

**O1L2** 5' - CAATGTTGCTGCTGCTGCCGCTACACGAGATGG -  
 TCACACGCTGACCTGGTGCGCCACTCACTGAAGGCGGC -3'

**O1L3** 5' - GGCAGCAGCAGCAACATTGGCAGCAACTATGTG -  
 AGCTGGTACCAGCAGTTGCCCCGGGAC -3'

**O1L4** 5' - CCGGCACGCCTGAGGGACGCTGGTTGTTATCAT -  
 AAATCAGCAGTTTTCGGCGCCGTCCCCGGGCAACTGC -3'

**O1L5** 5' - CCCTCAGGCGTGCCGGATCGTTTTAGCGGATCC -  
 AAAAGCGGCACCAGCGCGAGCCTTGCG -3'

**FIG.6B**

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY	DRAFTSMAN	

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY	DRAFTSMAN	

**O1L6** 5' - CCGCTTCGTCTTCGCTTTGCAGGCCCGTAATCG-  
 CAAGGCTCGCGCTGG -3'

**O2L1** 5' - GAATGCATACGCTCAGAGCGCACTGACCCAGCC-  
 AGCTTCAGTGAGCGGC -3'

**O2L2** 5' - CGCTGCTAGTACCCGTACACGAGATGGTAATGC-  
 TCTGACCTGGTGAGCCGCTCACTGAAGCTGG -3'

**O2L3** 5' - GTACGGGTACTAGCAGCGATGTGGGCGGCTATA-  
 ACTATGTGAGCTGGTACCAGCAGCATCCCGG -3'

**O2L4** 5' - CGCCTGAGGGACGGTTGCTCACATCATAAATCA-  
 TCAGTTTTCGGCGCCTTCCCGGGATGCTGCTGGTAC -3'

**O2L5** 5' - CAACCGTCCCTCAGGCGTGAGCAACCGTTTTAG-  
 CGGATCCAAAAGCGGCAACACCGCGAGCC -3'

**O2L6** 5' - CCGCTTCGTCTTCCGCTTGCAGGCCGCTAATGG-  
 TCAGGCTCGCGGTGTTGCCG -3'

**O3L1** 5' - GAATGCATACGCTAGCTATGAACTGACCCAGCC-  
 GCCTTCAGTGAGCG -3'

**O3L2** 5' - CGCCCAGCGCATCGCCGCTACACGAGATACGCG-  
 CGGTCTGACCTGGTGCAACGCTCACTGAAGGCGGC -3'

**O3L3** 5' - GGCGATGCGCTGGGCGATAAATACGCGAGCTGG-  
 TACCAGCAGAAACCCGGGCAGGCGC -3'

**O3L4** 5' - GCGTTCCGGGATGCCTGAGGGACGGTCAGAATC-  
 ATCATAAATCACCAGAACTGGCGCCTGCCCGGGTTTC -3'

**O3L5** 5' - CAGGCATCCCGGAACGCTTTAGCGGATCCAACA-  
 GCGGCAACACCGCGACCCTGACCATTAGCGG -3'

**O3L6** 5' - CCGCTTCGTCTTCCGCTGAGTGCCGCTAATGG-  
 TCAGGGTC -3'

**O1246H1** 5' - GCTCTTCACCCCTGTTACCAAAGCCCAG-  
 GTGCAATTG -3'

**O1AH2** 5' - GGCTTTGCAGCTCACTTTACGCTGCTGCCCGGT-  
 TTTTTCACCTCCGCGCCAGACTGAACCAATTGCACCTGGGC-  
 TTTG -3'

**FIG. 6C**



**O1AH3** 5' - GAAAGTGAGCTGCAAAGCCTCCGGAGGGCACTTT-  
 TAGCAGCTATGCGATTAGCTGGGTGCGCCAAGCCCCTGGGCAG  
 GGTC -3'

**O1AH4** 5' - GCCCTGAAACTTCTGCGCGTAGTTCGCCGTGCCA-  
 AAAATCGGAATAATGCCGCCCATCCACTCGAGACCCTGCCC-  
 AGGGGC -3'

**O1AH5** 5' - GCGCAGAAGTTTCAGGGCCGGGTGACCATTACC-  
 GCGGATGAAAGCACCAGCACCGCGTATATGGAAGTGAAGCAGCC  
 TGCG -3'

**O1ABH6** 5' - GCGCGCAATAATACAGGCCGTATCTTCGCT-  
 ACGCAGGCTGCTCAGTTCC -3'

**O1BH2** 5' - GGCTTTGCAGCTCACTTTTCACGCTCGCGCCCCGGT-  
 TTTTTCCTTCCGCGCCGCTCTGAACCAATTGCACCTGGGC-  
 TTTG -3'

**O1BH3** 5' - GAAAGTGAGCTGCAAAGCCTCCGGATATACCTT-  
 TACCAGCTATTATATGCACTGGGTCCGCCAAGCCCCTGGGCAG  
 GGTC -3'

**O1BH4** 5' - GCCCTGAAACTTCTGCGCGTAGTTCGTGCCGCC-  
 GCTATTCGGGTTAATCCAGCCCATCCACTCGAGACCCTGCCCCA  
 GGGGC -3'

**O1BH5** 5' - GCGCAGAAGTTTCAGGGCCGGGTGACCATGACC-  
 CGTGATACCAGCATTAGCACCGCGTATATGGAAGTGAAGCAGCC  
 TGCG -3'

**O2H2** 5' - GGTACAGGTCAGGGTCAGGGTTTGGGTGCGTTT-  
 CACCAGGGCCGGGCGCTTTCTTTCAATTGCACCTGGGCTTTG  
 -3'

**O2H3** 5' - CTGACCCTGACCTGTACCTTTTCCGGATTTAGC-  
 CTGTCCACGTCTGGCGTTGGCGTGGGCTGGATTGCGCCAGCCGC  
 CTGGGAAAG -3

**O2H4** 5' - GCGTTTTTCAGGCTGGTGCTATAATACTTATCAT-  
 CATCCCAATCAATCAGAGCCAGCCACTCGAGGGCTTTCCCAGG  
 CGGCTGG -3'

**FIG. 6D**

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY	DRAFTSMAN	

**FIG. 6E**

**O5H1** 5' - GCTCTTCACCCCTGTTACCAAAGCCGAAGTGCA  
 ATTG -3'

**O5H2** 5' - CCTTTGCAGCTAATTTTTCAGGCTTTCGCCCCGGT-  
 TTTTTCACCTCCGCGCCGCTCTGAACCAATTGCACTTCGGCTT  
 TGG -3'

**O5H3** 5' - CCTGAAAATTAGCTGCAAAGGTTCCGGATATTC-  
 CTTTACGAGCTATTGGATTGGCTGGGTGCGCCAGATGCCTGG  
 -3'

**O5H4** 5' - CGGAGAATAACGGGTATCGCTATCGCCCCGGATA-  
 AATAATGCCCATCCACTCGAGACCCTTCCCAGGCATCTGGCGC  
 AC -3'

**O5H5** 5' - CGATACCCGTTATTCTCCGAGCTTTCAGGGCCA-  
 GGTGACCATTAGCGCGGATAAAAGCATTAGCACCGCGTATCTT  
 C -3'

**O5H6** 5' - GCGCGCAATAATACATGGCCGTATCGCTCGCTT-  
 TCAGGCTGCTCCATTGAAGATACGCGGTGCTAATG -3'

**O6H2** 5' - GAAATCGCACAGGTCAGGCTCAGGGTTTGGCTC-  
 GGTTCACCAGGCCCGGACCAGACTGTTGCAATTGCACCTGG-  
 GCTTTG -3'

**O6H3** 5' - GCCTGACCTGTGCGATTTCCGGAGATAGCGTGA-  
 GCAGCAACAGCGCGGCGTGGAAGTGGATTCGCCAGTCTCCTGG  
 GCG -3'

**O6H4** 5' - CACCGCATAATCGTTATACCATTTGCTACGATA-  
 ATAGGTACGGCCCAGCCACTCGAGGCCACGCCCAGGAGACTG  
 GCG -3'

**O6H5** 5' - GGTATAACGATTATGCGGTGAGCGTGAAAAGCC-  
 GGATTACCATCAACCCGGATACTTCGAAAAACCAGTTTAGCCT  
 GC -3'

**O6H6** 5' - GCGCGCAATAATACACGGCCGTATCTTCCGGGG-  
 TCACGCTGTTTCAGTTGCAGGCTAAACTGGTTTTTC -3'

**OCLK1** 5' - GGCTGAAGACGTGGGCGTGTATTATTGCCAGCA-  
 GCATTATACCACCCCGCCGACCTTTGGCCAGGGTAC -3'

**FIG. 6F**

APPROVED	O.G. FIG.	
	BY	CLASS/SUBCLASS
DRAFTSMAN		

**OCLK2** 5' - GCGAAAAATAAACACGCTCGGAGCAGCCACCG -  
 TACGTTTAATTTCAACTTTCGTACCCTGGCCAAAGGTC -3'  
**OCLK3** 5' - GAGCGTGTTTATTTTTCCGCCGAGCGATGAACA -  
 ACTGAAAAGCGGCACGGCGAGCGTGGTGTGCCTGCTG -3'  
**OCLK4** 5' - CAGCGCGTTGTCTACTTTCCACTGAACTTTCGC -  
 TTCACGCGGATAAAAAGTTGTTTCAGCAGGCACACCACGC -3'  
**OCLK5** 5' - GAAAGTAGACAACGCGCTGCAAAGCGGCAACAG -  
 CCAGGAAAGCGTGACCGAACAGGATAGCAAAGATAG -3'  
**OCLK6** 5' - GTTTTTTCATAATCCGCTTTGCTCAGGGTCAGGG -  
 TGCTGCTCAGAGAATAGGTGCTATCTTTGCTATCCTGTTTCG -  
 3'  
**OCLK7** 5' - GCAAAGCGGATTATGAAAAACATAAAGTGTATG -  
 CGTGCGAAGTGACCCATCAAGGTCTGAGCAGCCCGGTG -3'  
**OCLK8** 5' - GGCATGCTTATCAGGCCTCGCCACGATTAAAAG -  
 ATTTAGTCACCGGGCTGCTCAGAC -3'  
**OCH1** 5' - GGCGTCTAGAGGCCAAGGCACCCTGGTGACGGT -  
 TAGCTCAGCGTCGAC -3'  
**OCH2** 5' - GTGCTTTTGTGCTGCTCGGAGCCAGCGGAAACACG -  
 CTTGGACCTTTGGTCGACGCTGAGCTAACC -3'  
**OCH3** 5' - CTCCGAGCAGCAAAAGCACCAGCGGCGGCACGG -  
 CTGCCCTGGGCTGCCTGGTTAAAGATTATTTCC -3'  
**OCH4** 5' - CTGGTCAGCGCCCCGCTGTTCCAGCTCACGGTG -  
 ACTGGTTCCGGGAAATAATCTTTAACCAGGCA -3'  
**OCH5** 5' - AGCGGGGCGCTGACCAGCGGCGTGCATACCTTT -  
 CCGGCGGTGCTGCAAAGCAGCGGCCTG -3'  
**OCH6** 5' - GTGCCTAAGCTGCTGCTCGGCACGGTCACAACG -  
 CTGCTCAGGCTATACAGGCCGCTGCTTTGCAG -3'  
**OCH7** 5' - GAGCAGCAGCTTAGGCACTCAGACCTATATTTG -  
 CAACGTGAACCATAAACCGAGCAACACC -3'  
**OCH8** 5' - GCGCGAATTCGCTTTTTCGGTTCCACTTTTTTAT -  
 CCACTTTGGTGTGCTCGGTTTATGG -3'

**FIG. 6G**

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY	DRAFTSMAN	

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

V A A P S V F I F P P S D E Q

BsiWI

~~~~~

CGTACGGTGG CTGCTCCGAG CGTGTTTATT TTTCCGCCGA GCGATGAACA

GCATGCCACC GACGAGGCTC GCACAAATAA AAAGCGGGCT CGTACTTGT

L K S G T A S V V C L L N N F Y

ACTGAAAGC GGCACGGCGA GCGTGGTGT CCTGCTGAAC AACTTTTATC

TGACTTTTCG CCGTGCCGCT CGCACCCAC GACGACTTG TTGAAAAATAG

P R E A K V Q W K V D N A L Q S G

CGCGTGAAGC GAAAGTTCAG TGGAAAGTAG ACAACGCGCT GCAAAGCGGC

GCGCACTTCG CTTTCAAGTC ACCTTTCATC TGTGCGCGA CGTTTCGCCG

N S Q E S V T E Q D S K D S T Y S

AACAGCCAGG AAAGCGTGAC CGAACAGGAT AGCAAAGATA GCACCTATTC

TTGTCGGTCC TTTCGCACTG GCTTGTCCTA TCGTTTCTAT CGTGGATAAG

FIG. 7A

|           |          |
|-----------|----------|
| APPROVED  | O.G.FIG. |
| BY        | CLASS    |
| DRAFTSMAN | SUBCLASS |

L S S T L T L S K A D Y E K H K  
 TCTGAGCAGC ACCCTGACCC TGAGCAAAGC GGATTATGAA AACATAAAG  
 AGACTCGTCG TGGGACTGGG ACTCGTTTCG CCTAATACTT TTTGTATTTC

V Y A C E V T H Q G L S S P V T K  
 TGTATGCGTG CGAAGTGACC CATCAAGGTC TGAGCAGCCC GTGACTAAA  
 ACATACGCAC GCTTCACTGG GTAGTTCCAG ACTCGTCGGG CCACTGATTT

S F N R G E A \*  
 StuI SphI  
 ~~~~~ ~~~~~  
 TCTTTTAATC GTGGCGAGGC CTGATAAGCA TGC  
 AGAAAATTAG CACCGCTCCG GACTATTCGT ACG

**FIG. 7B**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

A S T K G P S V F P L A P S S  
 BlpI Sali  
 ~~~~~  
 GCTCAGCGTC GACCAAAGGT CCAAGCGTGT TTCCGCTGGC TCCGAGCAGC  
 CGAGTCGCAG CTGGTTTCCA GGTTCGCACA AAGCGACCG AGGCTCGTCG  
 K S T S G G T A A L G C L V K D Y  
 AAAAGCACCA GCGCGGCAC GGCTGCCCTG GGCTGCCCTGG TTAAGATTA  
 TTTTCGTGGT CGCCGCCGTG CCGACGGGAC CCGACGGACC AATTCTAAT  
 F P E P V T V S W N S G A L T S  
 TTTCCCGGAA CCAGTCACCG TGAGCTGGAA CAGCGGGCG CTGACCAGCG  
 AAAGGGCCTT GGTCA GTGC ACTCGACCTT GTCGCCCCGC GACTGGTCGC  
 G V H T F P A V L Q S S G L Y S L  
 GCGTGCATAC CTTTCCGGCG GTGCTGCAAA GCAGCGGCCT GTATAGCCTG  
 CGCACGTATG GAAAGGCCGC CACGACGTTT CGTCGCCCGA CATATCGGAC

FIG. 7C

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

S S V V T V P S S S L G T Q T Y I  
 AGCAGCGTTG TGACCGTGCC GAGCAGCAGC TTAGGCACTC AGACCTATAT  
 TCGTCGCAAC ACTGGCACGG CTCGTCGTCG AATCCGTGAG TCTGGATATA

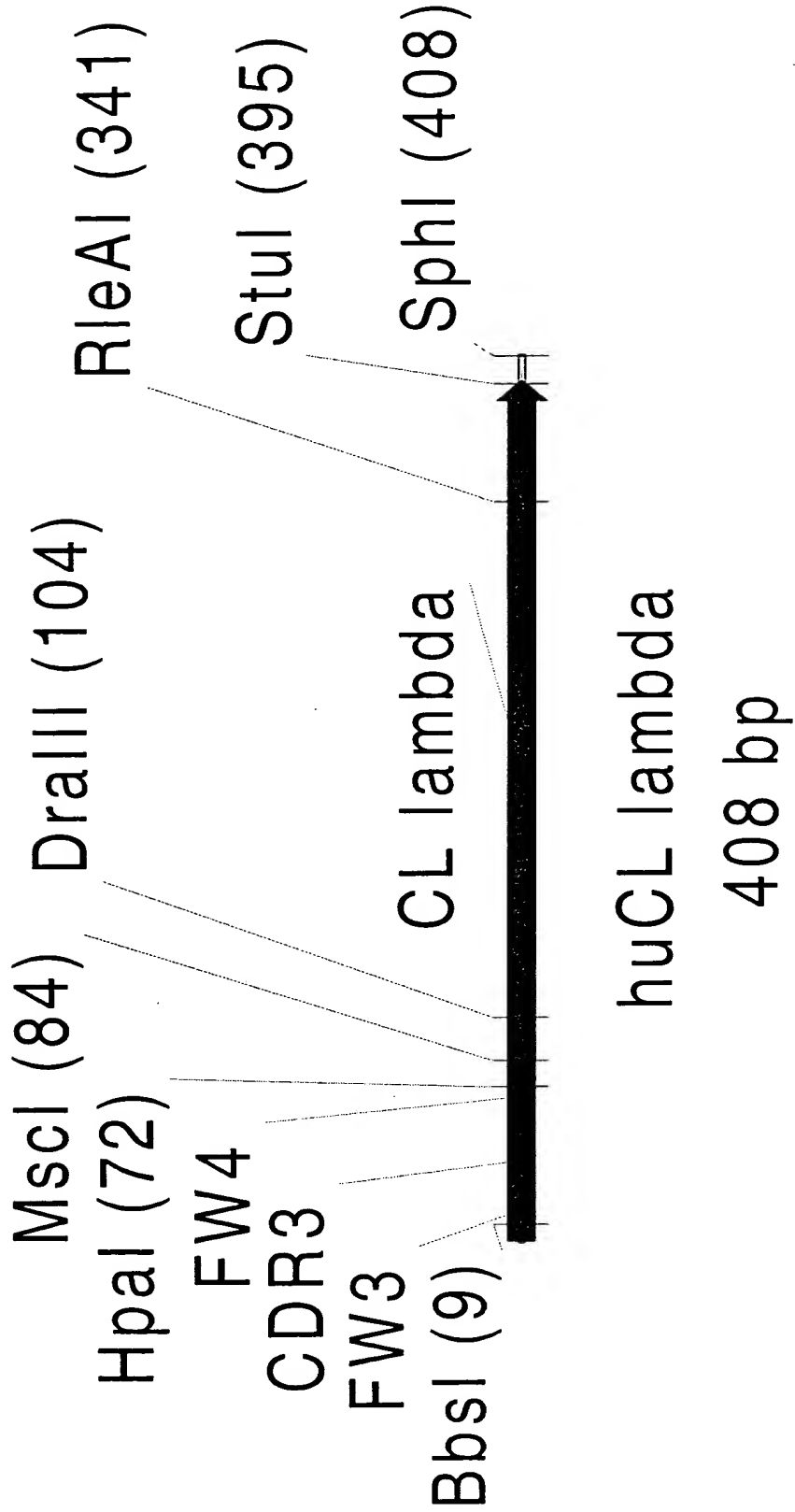
C N V N H K P S N T K V D K K V  
 TTGCAACGTG AACCATAAAC CGAGCAACAC CAAAGTGGAT AAAAAAGTGG  
 AACGTTGCAC TTGGTATTG GCTCGTTGTG GTTTCACCTA TTTTTCACC

E P K S E F \*  
 EcoRI HindIII  
 ~~~~~  
 AACCAGAAAG CGAATTCTGA TAAGCTT  
 TTGGCTTTC GCTTAAGACT ATTCGAA

**FIG. 7D**



|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |



**FIG. 7E**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | D.G. F18. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

|        |                                                          |       |        |
|--------|----------------------------------------------------------|-------|--------|
| BbsI   |                                                          |       |        |
|        | ~~~~~                                                    |       |        |
| 1      | GAAGACGAAG CGGATTATTA TTGCCAGCAG CATTATACCA CCCC GCCCTGT |       |        |
|        | CTTCTGCTTC GCCTAATAAT AACGGTCGTC GTAATATGGT GGGCGGACA    |       |        |
| HpaI   |                                                          | MscI  | DraIII |
|        | ~~~~~                                                    | ~~~~~ | ~~~~~  |
| 51     | GTTTGGCGGC GGCACGAAGT TAACCGTTCT TGGCCAGCCG AAAGCCGCAC   |       |        |
|        | CAAACCGCCG CCGTGCTTCA ATTGGCAAGA ACCGGTCGGC TTTCGGCGTG   |       |        |
| DraIII |                                                          |       |        |
|        | ~~~~~                                                    |       |        |
| 101    | CGAGTGTGAC GCTGTTTCCG CCGAGCAGCG AAGAATTGCA GGCGAACAAA   |       |        |
|        | GCTCACACTG CGACAAAGGC GGCTCGTCGC TTCTTAACGT CCGCTTGTTT   |       |        |
| 151    | GCGACCCTGG TGTGCCCTGAT TAGCGACTTT TATCCGGGAG CCGTGACAGT  |       |        |
|        | CGCTGGGACC ACACGGACTA ATCGCTGAAA ATAGGCCCTC GGCACGTCA    |       |        |

FIG. 7F

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | D.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

201 GGCCCTGGAAG GCAGATAGCA GCCCCGTCAG GCGGGGAGTG GAGACCACCA  
 CCGGACCCTTC CGTCTATCGT CCGGGCAGTT CCGCCCTCAC CTCTGGTGGT

251 CACCCCTCCAA ACAAGCAAC AACAAAGTACG CGGCCAGCAG CTATCTGAGC  
 GTGGGAGGTT TGTTCGTTG TTGTTCAATGC GCCGGTCGTC GATAGACTCG

RleAI

~~~~~

301 CTGACGCCCTG AGCAGTGGAA GTCCCCACAGA AGCTACAGCT GCCAGGTCAC  
 GACTGCCGGAC TCGTCACCCTT CAGGGTGTCT TCGATGTCTGA CCGTCCAGTG

StuI

~~~~~

**FIG. 7G**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

351 GCATGAGGGG AGCACCGTGG AAAAAACCGT TGCGCCGACT GAGGCCGTGAT  
CGTACTCCCC TCGTGGCACC TTTTGTGGCA ACGCGGCTGA CTCCGGGACTA

SphI

~~~~~

401 AAGCATGC  
TTCGTACG

**FIG. 7H**

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

**M24: assembly PCR**

**M24-A:**

GAAGACAAGCGGATTATTATTTGCCAGCAGCATTATACCAACCCCGCCTGTGTTTGGCGGCG-  
 GCACGAAGTTAACCGTTC

**M24-B:**

CAATTCTTCGCTCGCGGGAACAGCGTCACACTCGGTGCGGCTTTCGGCTGGCCAA-  
 GAACGGTTAACTTCGTGCCGC

**M24-C:**

CGCCGAGCAGCGAAGAATTGCAGGCGAACAAAGCGACCCCTGGTGTGCCCTGATTAGCGACT-  
 TTTATCCGGAGCCGTGACA

**FIG. 71**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN:		

**M24-D:**

TGTTTGGAGGGTGTGGTCTCCACTCCCGCCTTGACGGGGCTGCTATCTGCCTTCCAG-  
GCCACTGTACGGCTCCCGG

**M24-E:**

CCACACCCCTCCAAACAAAGCAACAAGTACGGGCCAGCAGCTATCTGAGCCTGACGC-  
CTGAGCAGTGGAAAGTCCCCACAGAAGCTACAGCTG

**M24-F:**

GCATGCTTATCAGGCCTCAGTCGGCGCAACGGTTTTTCCACGGTGCTCCCCCTCATGCCGT-  
GACCTGGCAGCTGTAGCTTC

**FIG. 7J**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

M K Q S T I A L A L L P L L F T P  
 Sapi  
 ~~~~~

ATGAAACAAA GCACTATTGC ACTGGCACTC TTACCGTTGC TCTTCACCCC  
 TACTTTGTTT CGTGATAACG TGACCGTGAG AATGGCAACG AGAAGTGGGG

V T K A D Y K D E V Q L V E S G  
 MfeI  
 ~~~~~

TGTTACCAA GCCGACTACA AAGATGAAGT GCAATTGGTG GAAAGCGCGG  
 ACAATGGTTT CGGCTGATGT TTCTACTTCA CGTTAACCAC CTTTCGCCCG

G G L V Q P G G S L R L S C A A S  
 BspEI  
 ~~~~~

GCGGCCTGGT GCAACCGGGC GGCAGCCTGC GTCTGAGCTG CGCGGCCTCC  
 CGCCGGACCA CGTTGGCCCG CCGTCGGACG CAGACTCGAC GCGCCGGAGG

G F T F S S Y A M S W V R Q A P G  
 BspEI  
 ~~~~~  
 BstXI  
 ~~~~~

GGATTACCT TTAGCAGCTA TGGATGAGC TGGGTGCGCC AAGCCCCTGG

CCTAAATGGA AATCGTCGAT ACGCTACTCG ACCCAGCGG TTCGGGGACC

**FIG. 8A**

|           |           |
|-----------|-----------|
| APPROVED  | O.G. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |

K G L E W V S A I S G S G S T  
 XhoI  
 ~~~~~  
 GAAGGTCTC GAGTGGGTGA GCGCGATTAG CCGTAGCGGC GGCAGCACCT  
 CTTCCAGAG CTCACCCACT CCGCCTAATC GCCATCGCCG CCGTCGTGGA  
 Y Y A D S V K G R F T I S R D N S  
 PmlI NspV  
 ~~~~~  
 ATTATGCGA TAGCGTGAAA GGCCGTTTTC CCATTTCACG TGATAATTCG  
 TAATACGCCT ATCGCACTTT CCGGCAAAAT GGTAAGTGC ACTATTAAGC  
 K N T L Y L Q M N S L R A E D T A  
 NspV EagI  
 ~~~~~  
 AAAAACACCC TGTATCTGCA AATGAACAGC CTGCGTGCCG AAGATACGGC  
 TTTTGTGGG ACATAGACGT TTAAGTGTGC GACGCACGCC TTCTATGCCG  
 V Y Y C A R W G G D G F Y A M D  
 EagI BssHII  
 ~~~~~  
 CGTGATTAT TGCAGCGGT GGGCGGCGA TGGCTTTTAT GCGATGGATT

**FIG. 8B**



|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

GCACATAATAACGCGCGCAA CCCC GCCGCT ACCGAAATA CGTACCTAA  
Y W G Q G T L V T V S S A G G G S  
StyI BlpI  
~~~~~  
ATTGGGGCCA AGCACCCCTG GTGACGGTTA GCTCAGCGGG TGGCGGTTCT  
TAACCCCGGT TCCGTGGGAC CACTGCCAAT CGAGTCGCC ACCGCCAAGA  
G G G G S G G G G G G G S D I  
EcoRV  
~~~~~  
GGCGGCGGTG GGAGCGGTGG CGGTGGTTCT GGCGGTGGTG GTTCCGATAT  
CCGCCGCCAC CCTCGCCACC GCCACCAAGA CCGCCACCAC CAAGGCTATA  
V M T Q S P L S L P V T P G E P  
EcoRV BanII  
~~~~~  
CGTGATGACC CAGAGCCCAC TGAGCCTGCC AGTGACTCCG GCGAGCCTG  
GCACTACTGG GTCTCGGGTG ACTCGGACGG TCACTGAGGC CCGCTCGGAC  
A S I S C R S S Q S L L H S N G Y  
PstI  
~~~~~  
CGAGCATTAG CTGCAGAAGC AGCCAAAGCC TGCTGCATAG CAACGGCTAT  
GTCGTAATC GACGTCTTCG TCGGTTTCGG ACGACGTATC GTTGCCGATA

FIG. 8C

|           |                |
|-----------|----------------|
| APPROVED  | O.G. FIG.      |
| BY        | CLASS SUBCLASS |
| DRAFTSMAN |                |

N Y L D W Y L Q K P G Q S P Q L L  
                     KpnI                      SexAI                      AseI  
                     ~~~~~                      ~~~~~                      ~~~~~  
 AACTATCTGG ATTGGTACCT TCAAAAACCA GTCAAAGCC CGCAGCTATT  
 TTGATAGACC TAACCATGGA AGTTTGTGGT CCAGTTTCGG GCGTCGATAA  
  
 I Y L G S N R A S G V P D R F S  
                     AseI                      Eco0109I  
                     ~~~~~                      ~~~~~  
 AATTATCTG GGCAGCAACC GTGCCAGTGG GTCCCGGAT CGTTTTCGG  
 TTAATAGAC CCGTCGTTGG CACGGTCACC CCAGGGCCTA GCAAATCGC  
  
 G S G S G T D F T L K I S R V E A  
                     BamHI  
                     ~~~~~  
 GCTCTGGATC CGGCACCGAT TTTACCCCTGA AAATTAGCCG TGTGGAAGCT  
 CGAGACCTAG GCCGTGGCTA AAATGGGACT TTTAATCGGC ACACCTTCGA  
  
 E D V G V Y Y C Q Q H Y T T P P T  
                     BbsI  
                     ~~~~~  
 GAAGACGTGG GCGTGTATTA TTGCCAGCAG CATTATACCA CCCC GCCGAC  
 CTTCTGCACC CGCACATAAT AACGGTCGTC GTAATATGGT GGGGCGGCTG

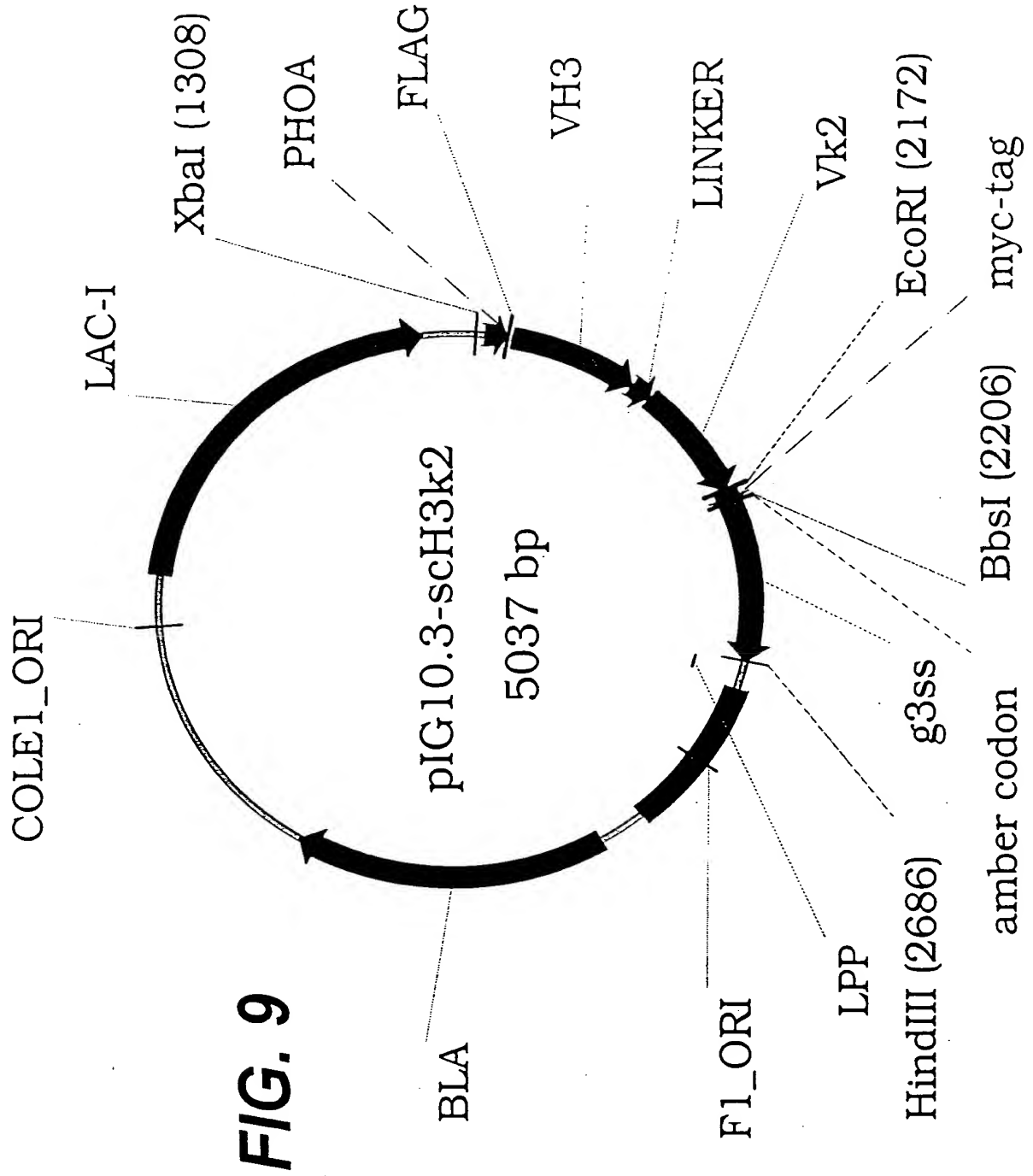
**FIG. 8D**

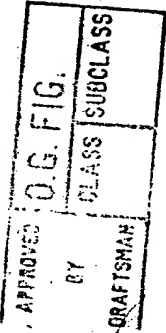
|                                                                                                                                                                                                                                                                                                                            |   |   |   |   |   |   |   |   |   |   |   |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F                                                                                                                                                                                                                                                                                                                          | G | Q | G | T | K | V | E | I | K | R | T | E | F |
| <div style="display: flex; justify-content: space-between;"> <div>           MSCI<br/>           ~~~~~<br/>           CTTTGGCCAG GGTACGAAAG TTGAAATTAA ACGTACGGAA TTC<br/>           GAAACCGGTC CCATGCTTTC AACTTTAATT TGCATGCCTT AAG         </div> <div>           BsiWI ECORI<br/>           ~~~~~         </div> </div> |   |   |   |   |   |   |   |   |   |   |   |   |   |

**FIG. 8E**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | 0.6. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

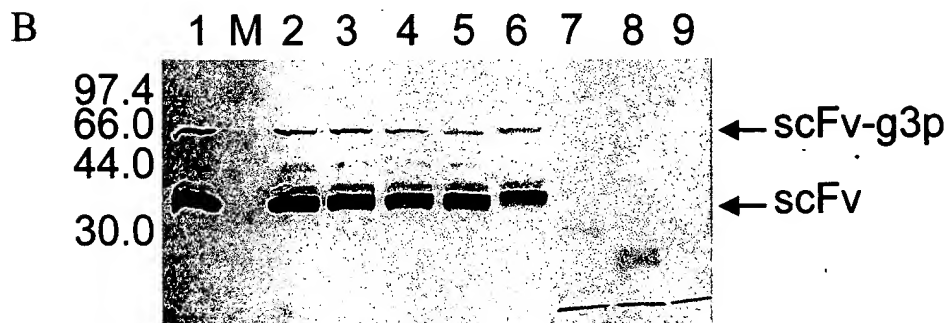
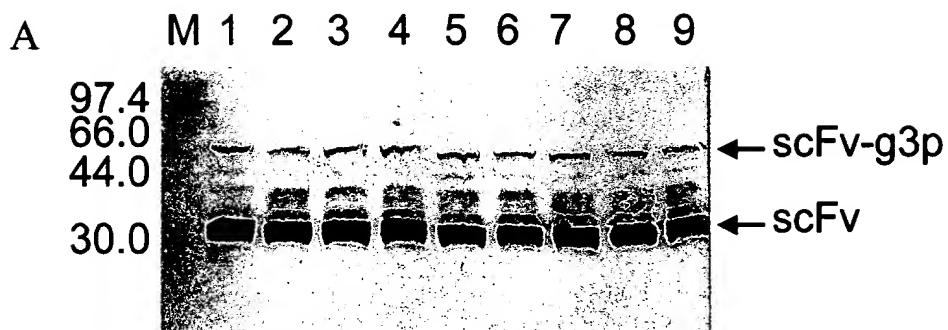




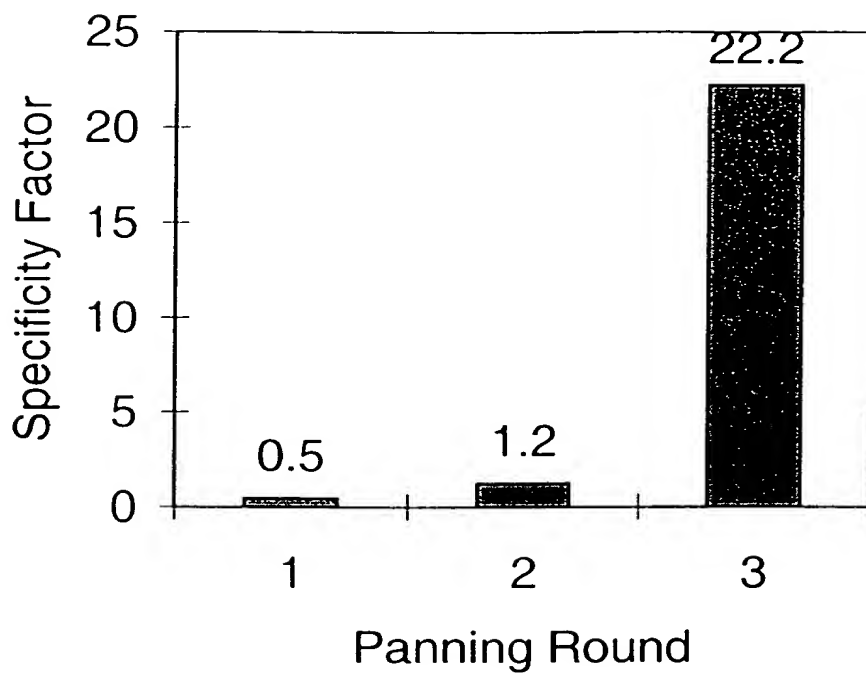
|   |      |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 103  | W | W | W | W | W | W | W | W | W | W | W | W | W |
|   | 102  | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
|   | 101  | D | D | D | D | D | D | D | D | D | D | D | D | D |
|   | 100F | N | - | - | - | - | - | - | - | - | - | - | - | - |
|   | 100D | - | - | - | - | - | - | - | - | - | - | - | - | - |
|   | 100C | - | - | - | - | - | - | - | - | - | - | - | - | - |
|   | 100B | A | - | - | - | - | - | - | - | - | - | - | - | - |
|   | 100A | Y | - | - | - | - | - | - | - | - | - | - | - | - |
|   | 100  | F | Y | H | H | R | Y | P | - | S | K | A | D | M |
|   | 99   | G | N | W | Y | A | G | Q | R | N | S | A | Y | W |
|   | 98   | D | M | E | L | K | T | A | T | R | D | F | Q | E |
|   | 97   | G | K | T | E | L | T | E | I | N | G | T | P | S |
| B | 96   | G | G | R | R | F | N | N | A | Y | V | K | A | Q |
|   | 95   | W | F | H | V | K | W | I | T | W | S | S | V | M |
|   | 94   | R | R | R | R | R | R | R | R | R | R | R | R | R |
|   | 93   | A | A | A | A | A | A | A | A | A | A | A | A | A |
|   | 92   | C | C | C | C | C | C | C | C | C | C | C | C | C |
|   |      |   | C | C | C | C | C | C | C | C | C | C | C | C |
|   |      |   | C | C | C | C | C | C | C | C | C | C | C | C |

FIG. 10A

**FIG. 10B**



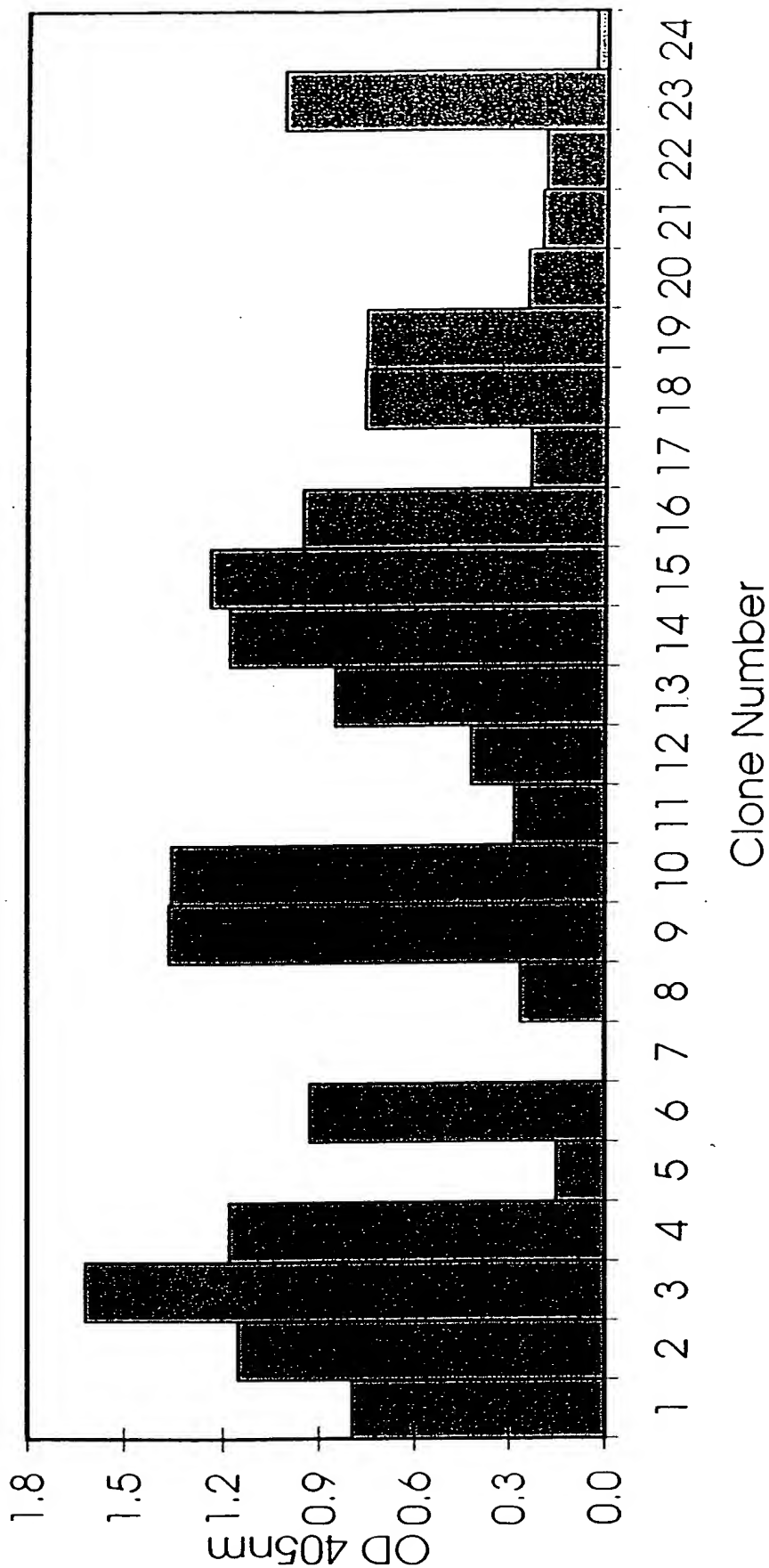
**FIG. 11**



**FIG. 12**

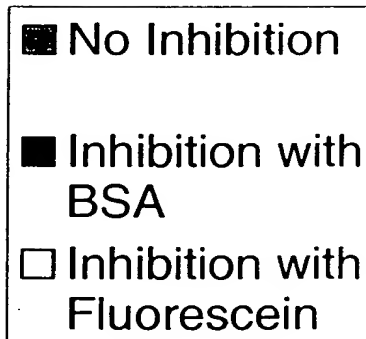
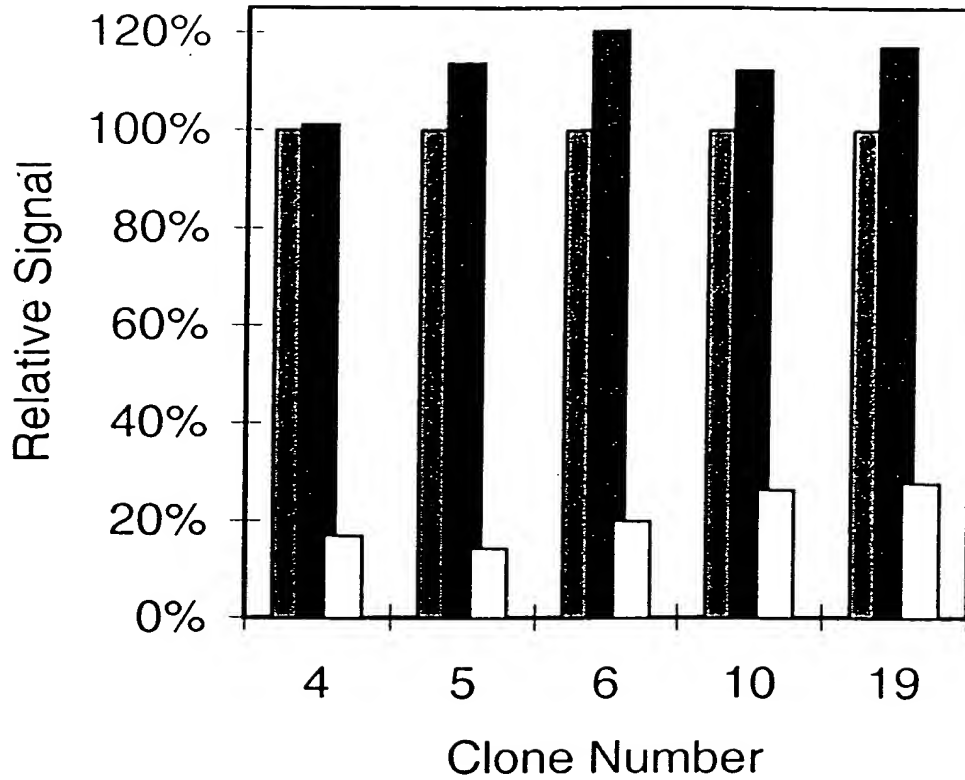


|           |           |
|-----------|-----------|
| APPROVED  | O.G. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |



**FIG. 13**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
|           | CLASS     | SUBCLASS |
| BY        |           |          |
| DRAFTSMAN |           |          |



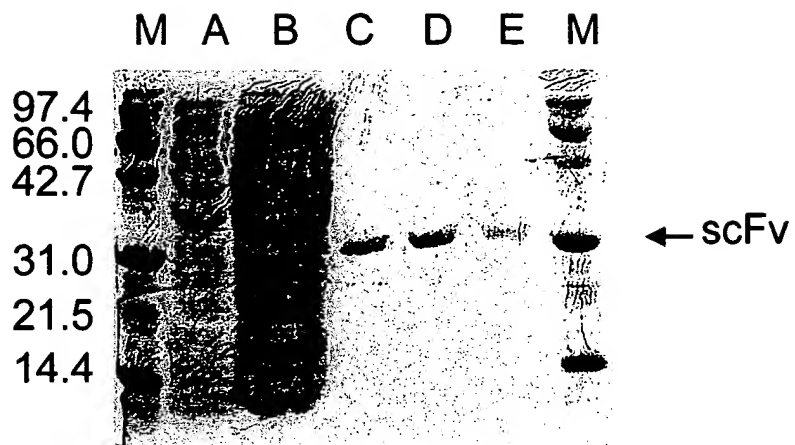
**FIG. 14**

|           |                |
|-----------|----------------|
| APPROVED  | O.G. FIG.      |
| BY        | CLASS SUBCLASS |
| DRAFTSMAN |                |

|           |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency | 1 | 3 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 103       | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W |
| 102       | V | V | V | V | V | V | V | Y | Y | V | V | V | V | V | V | Y |
| 101       | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 100E      | F | F | F | F | F | M | F | F | F | F | F | F | F | F | F | F |
| 100D      | R | R | R | R | S | Q | V | K | Y | R | R | R | I | Q | R | R |
| 100C      | F | R | H | R | N | D | A | V | K | D | N | P | K | K | A | S |
| 100B      | R | M | R | K | K | F | K | T | V | M | M | R | R | R | F | F |
| 100A      | P | K | L | I | W | S | K | S | R | R | R | A | K | P | S | T |
| 100       | N | R | H | R | K | P | L | Y | S | R | G | F | G | Y | R | Y |
| 99        | Q | K | R | K | M | H | F | R | R | W | R | K | K | T | R | Q |
| 98        | M | Q | K | R | I | V | M | H | M | S | R | K | H | I | K | K |
| 97        | M | K | G | M | K | E | P | F | T | R | P | K | V | H | T | L |
| 96        | R | S | N | K | R | I | K | K | K | K | N | G | M | K | W | K |
| 95        | K | R | R | R | Y | L | R | R | R | K | R | K | R | R | R | K |
| 94        | A | R | R | R | A | R | A | R | R | A | R | A | R | A | R | A |
| 93        | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A | A |
| 92        | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C |

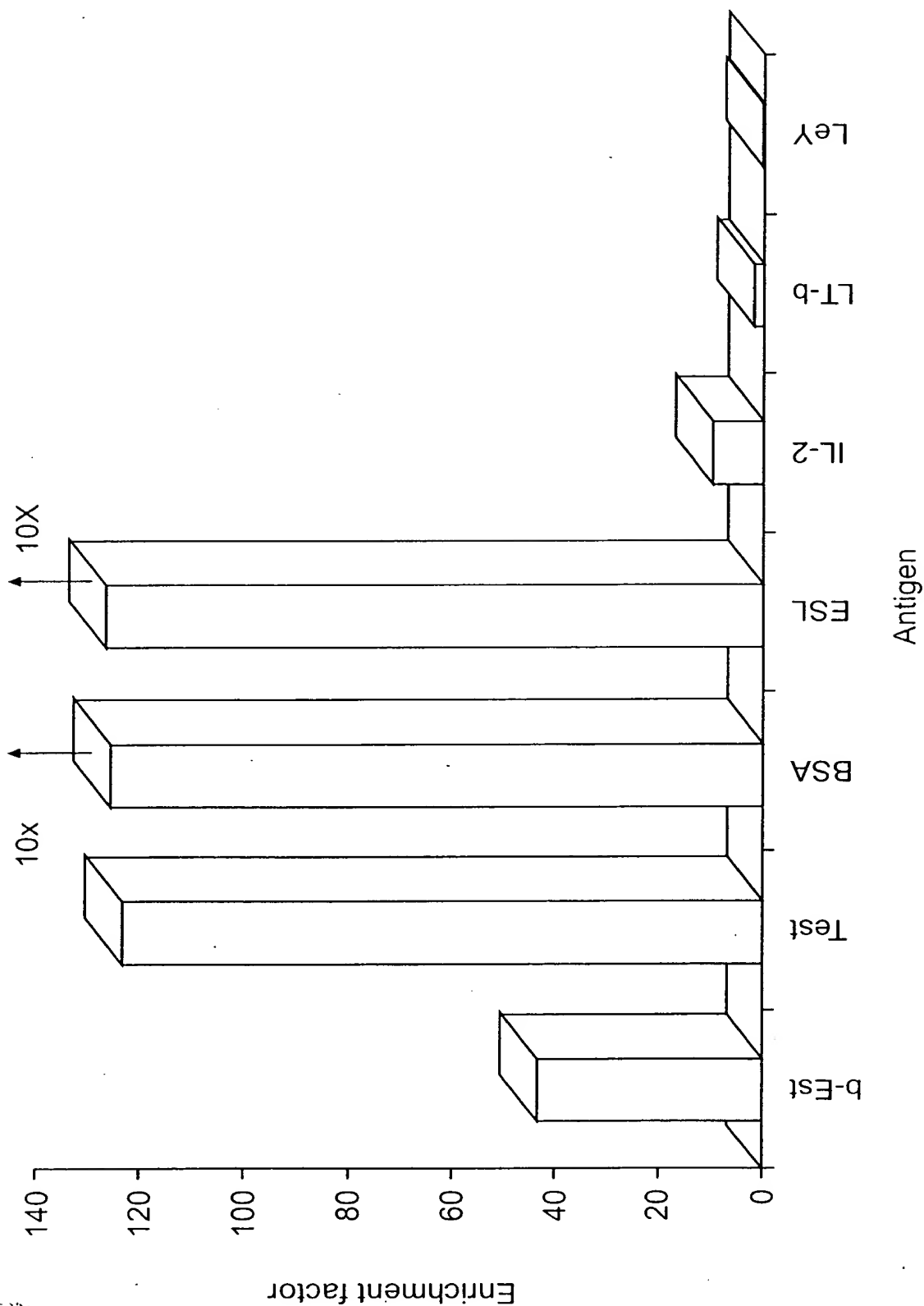
FIG. 15

|           |           |       |          |
|-----------|-----------|-------|----------|
| APPROVED  | O.G. FIG. | CLASS | SUBCLASS |
| BY        |           |       |          |
| DRAFTSMAN |           |       |          |



**FIG. 16**

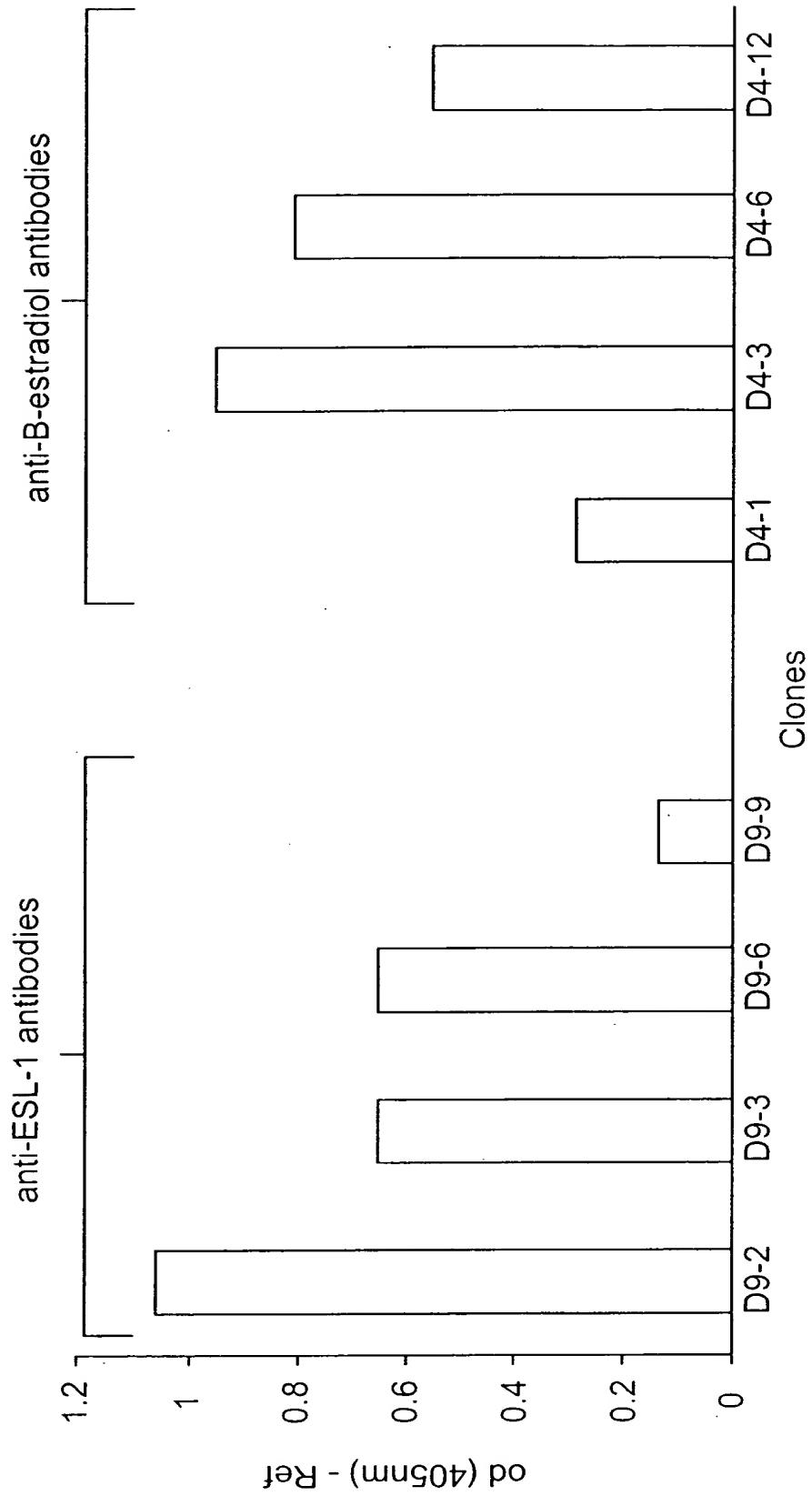
|           |           |
|-----------|-----------|
| APPROVED  | 0.0. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |



**FIG. 17**



|           |           |          |  |
|-----------|-----------|----------|--|
| APPROVED  | O.G. FIG. |          |  |
| BY        | CLASS     | SUBCLASS |  |
| DRAFTSMAN |           |          |  |



**FIG. 18**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

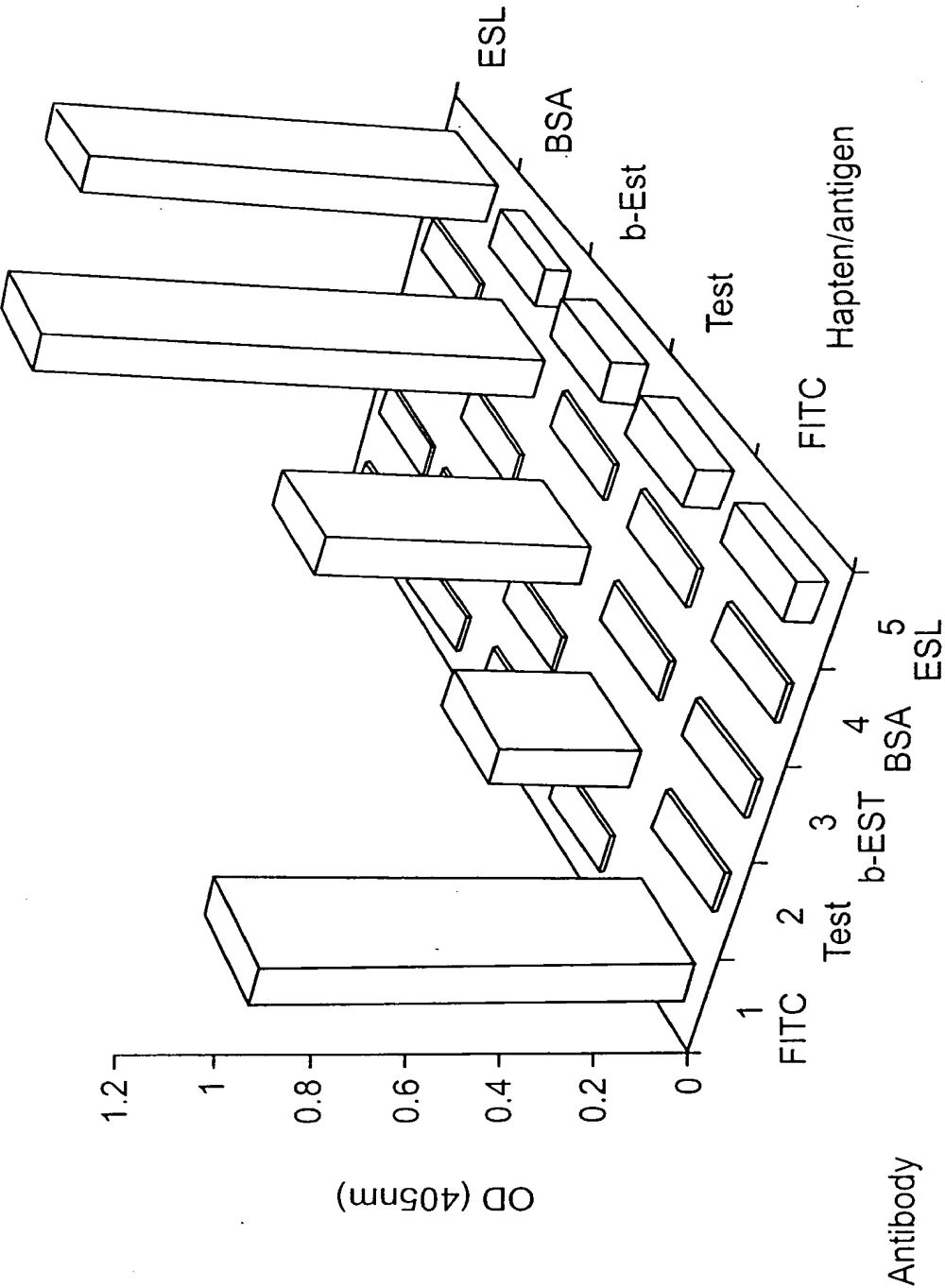


FIG. 19

|           |           |          |  |
|-----------|-----------|----------|--|
| APPROVED  | D.G. FIG. |          |  |
| BY        | CLASS     | SUBCLASS |  |
| DRAFTSMAN |           |          |  |

|      | FREQUENCY |   |   |   |
|------|-----------|---|---|---|
| 103  | W         | 3 | W | W |
| 102  | V         | 8 | Y | Y |
| 101  | D         | 7 | D | D |
| 100E | F         | 1 | F | F |
| 100D | G         | 1 | M | M |
| 100C | K         | 1 | R | R |
| 100B | R         | 1 | G | G |
| 100A | T         | 1 | I | I |
| 100  | A         | 1 | P | P |
| 99   | Q         | 1 | F | F |
| 98   | W         | 1 | E | E |
| 97   | P         | 1 | W | W |
| 96   | R         | 1 | Q | Q |
| 95   | T         | 1 | N | N |
| 94   | R         | 1 | R | R |
| 93   | A         | 1 | A | A |
| 92   | C         | 1 | C | C |

FIG. 20



|           |           |
|-----------|-----------|
| APPROVED  | O.G. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |

|      |           |   |   |   |   |   |
|------|-----------|---|---|---|---|---|
|      | FREQUENCY |   |   |   |   |   |
| 103  | W         | W | W | W | W | W |
| 102  | Y         | Y | Y | V | Y | Y |
| 101  | D         | D | D | D | D | D |
| 100E | F         | F | F | F | F | F |
| 100D | A         | Q | Q | M | W | Q |
| 100C | L         | M | M | T | K | M |
| 100B | K         | K | K | K | M | Q |
| 100A | R         | Q | N | M | I | R |
| 100  | K         | W | R | W | R | S |
| 99   | A         | A | A | A | R | A |
| 98   | Q         | H | Y | G | L | R |
| 97   | K         | R | K | R | P | K |
| 96   | I         | N | V | K | K | R |
| 95   | Y         | Y | Y | Y | R | Y |
| 94   | R         | R | R | R | R | R |
| 93   | A         | A | A | A | A | A |
| 92   | C         | C | C | C | C | C |

FIG. 21

|           |           |
|-----------|-----------|
| APPROVED  | O.G. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |

|      | FREQUENCY |   |   |   |   |   |   |   |
|------|-----------|---|---|---|---|---|---|---|
| 103  | W         | W | W | W | W | W | W | W |
| 102  | V         | Y | Y | Y | Y | V | Y | Y |
| 101  | D         | D | D | D | D | D | D | D |
| 100E | F         | M | F | M | M | F | M | F |
| 100D | H         | P | Q | W | V | S | W | W |
| 100C | G         | D | V | H | H | Q | E | Y |
| 100B | K         | Y | W | H | D | T | N | W |
| 100A | I         | S | Y | P | R | F | E | F |
| 100  | K         | N | N | K | A | Q | T | I |
| 99   | S         | F | D | L | Q | S | Q | L |
| 98   | R         | D | L | Y | E | N | F | T |
| 97   | Y         | R | D | A | I | H | H | P |
| 96   | R         | W | A | Q | L | W | D | W |
| 95   | Q         | - | M | L | R | S | V | D |
| 94   | R         | R | R | R | R | R | R | R |
| 93   | A         | A | A | A | A | A | A | A |
| 92   | C         | C | C | C | C | C | C | C |

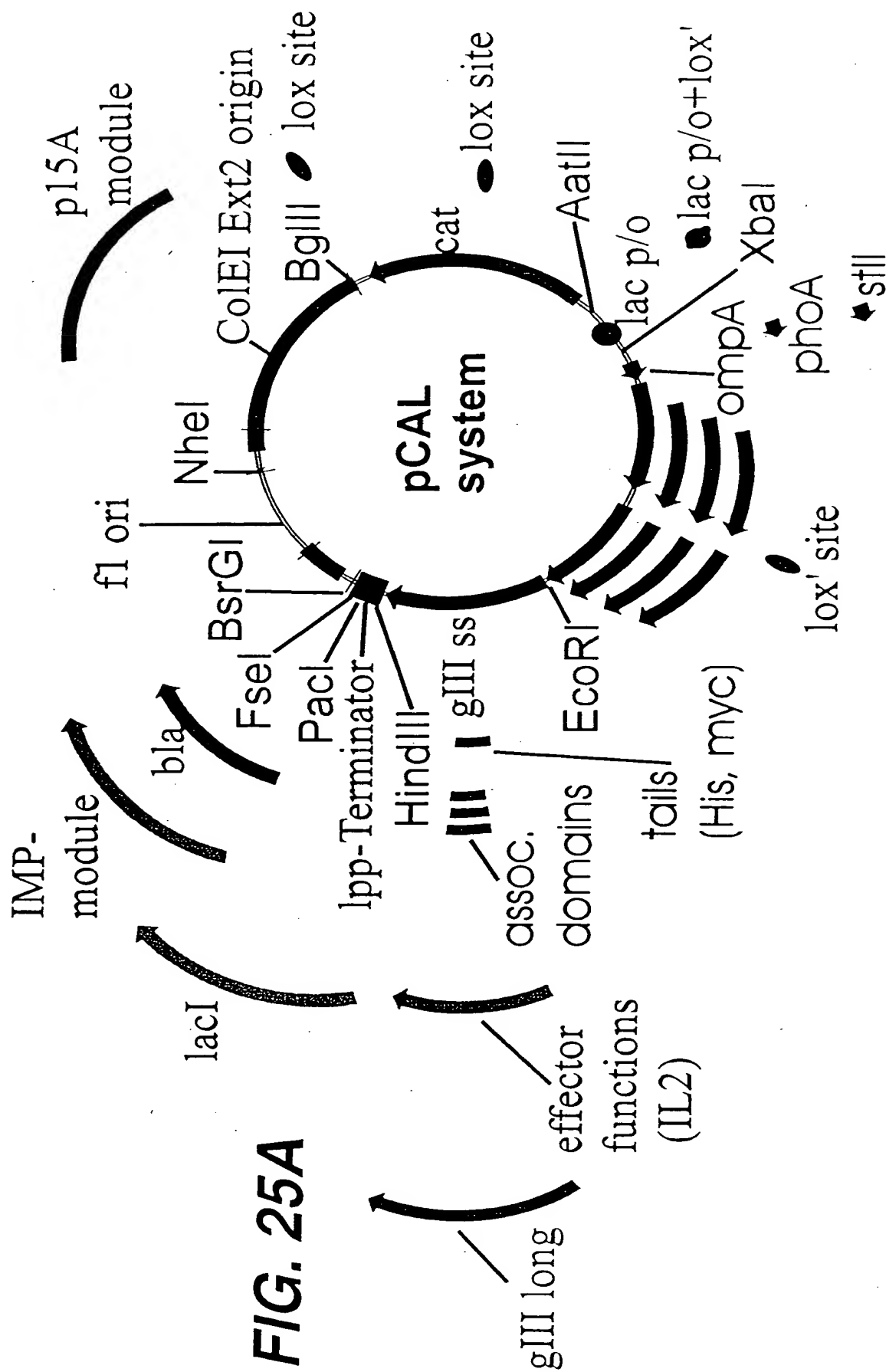
FIG. 22

| FREQUENCY |   |    |
|-----------|---|----|
| 103       | W | 4  |
| 102       | Y | 4  |
| 101       | D | 2  |
| 100F      | - | 1  |
| 100D      | - | 1  |
| 100Ca     | - | 2  |
| 100C      | - | 13 |
| 100B      | - | 3  |
| 100A      | - | 1  |
| 100       | E | 1  |
| 99        | T | 1  |
| 98        | F | 1  |
| 97        | G | 1  |
| 96        | F | 1  |
| 95        | G | 1  |
| 94        | R | 1  |
| 93        | A | 1  |
| 92        | C | 1  |

FIG. 23

**FIG. 24**

|           |           |
|-----------|-----------|
| APPROVED  | O.G. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUSCLASS  |



| unique restriction site | Isoschizomers                     |
|-------------------------|-----------------------------------|
| AatII                   | /                                 |
| AfIII                   | BfrI, BspTI, Bst98I               |
| AscI                    | /                                 |
| Asel                    | Vspl, AsnI, PshBI                 |
| BamHI                   | BstI                              |
| BbeI                    | EheI, KasI, NarI                  |
| BbsI                    | BpuAI, BpiI                       |
| BglII                   | /                                 |
| BlpI                    | Bpu1102I, CelII, BlpI             |
| BsaBI                   | MamI, Bsh1365I, BsrBRI            |
| BsiWI                   | Pfl23II, SphI, SniI               |
| BspEI                   | AccIII, BseAI, BsiMI, Kpn2I, MroI |
| BsrGI                   | Bsp1407I, SspBI                   |
| BssHII                  | Paul                              |
| BstEII                  | BstPI, Eco91I, EcoO65I            |
| BstXI                   | /                                 |
| Bsu36I                  | AocI, CvnI, Eco81I                |
| DraIII                  | /                                 |
| DsmAI                   |                                   |
| EagI                    | BstZI, EclXI, Eco52I, XmaIII      |
| Eco57I                  | /                                 |
| EcoO109I                | DraII                             |
| EcoRI                   | /                                 |
| EcoRV                   | Eco32I                            |
| FseI                    | /                                 |
| HindIII                 | /                                 |
| HpaI                    | /                                 |
| KpnI                    | Acc65I, Asp718I                   |
| MluI                    | /                                 |
| MscI                    | Ball, MluNI                       |

**FIG. 25B**

|           |           |       |          |
|-----------|-----------|-------|----------|
| APPROVED  | O.G. FIG. | CLASS | SUBCLASS |
| BY        |           |       |          |
| DRAFTSMAN |           |       |          |

|          |           |          |
|----------|-----------|----------|
| APPROVED | O.G. FIG. |          |
|          | CLASS     | SUBCLASS |
| BY       | DRAFTSMAN |          |

| unique restriction site | Isoschizomers                      |
|-------------------------|------------------------------------|
| MunI                    | MfeI                               |
| NheI                    | /                                  |
| NsiI                    | Ppu10I, EcoT22I, Mph1103I          |
| NspV                    | Bsp119I, BstBI, Csp45I, LspI, SfuI |
| PacI                    | /                                  |
| PmeI                    | /                                  |
| PmlI                    | BbrPI, Eco72I, PmaCI               |
| Psp5II                  | PpuMI                              |
| PstI                    | /                                  |
| RsrII                   | (RsrI), CpoI, CspI                 |
| SanDI                   | /                                  |
| SapI                    | /                                  |
| SexAI                   | /                                  |
| SpeI                    | /                                  |
| SfiI                    | /                                  |
| SphI                    | BbuI, PaeI, NspI                   |
| StuI                    | AatI, Eco147I                      |
| StyI                    | Eco130I, EcoT14I                   |
| XbaI                    | BspLU11II                          |
| XhoI                    | PaeR7I                             |
| XmaI                    | AvaI, SmaI, Cfr9I, PspAI           |

**FIG. 25C**

|           |           |
|-----------|-----------|
| APPROVED  | O.G. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |

| No   | module/flanking restriction sites | functional element                                            | sites to be removed | sites to be inserted | template      | reference                                                                                                                           |
|------|-----------------------------------|---------------------------------------------------------------|---------------------|----------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------|
| M1   | AatII-lacp/o-XbaI                 | lac promoter/operator                                         | 2x VspI (AseI)      | AatII                | vector pASK30 | Skerra et al. (1991) BioTechnology 9, 273-278                                                                                       |
| M2   | BglII-lox-AatII                   | Cre/lox recombination site                                    | 2x VspI (AseI)      | lox, BglII           | (synthetic)   | Hoess et al. (1986) Nucleic Acids Res. 2287-2300                                                                                    |
| M3   | XbaI-lox'-SphI                    | Cre/lox' recombination site                                   | none                | lox', SphI           | (synthetic)   | see M2                                                                                                                              |
| M7-I | EcoRI-glllong-HindIII             | gllp of filamentous phage with N-terminal myctail/amber codon | SphI, BamHI         | none                 | vector pLG10  | Ge et al., (1994) Expressing antibodies in E. coli. In: Antibody engineering: A practical approach. IRL Press, New York, pp 229-266 |

**FIG. 26A**



|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

|         |                      |                                                                          |                            |                   |              |          |
|---------|----------------------|--------------------------------------------------------------------------|----------------------------|-------------------|--------------|----------|
| M7-II   | EcoRI-gIIIss-HindIII | truncated gIIIp of filamentous phage with N-terminal Gly-Ser linker      | SphI                       |                   | vector pIG10 | see M7-I |
| M7-III  | EcoRI-gIIIss-HindIII | truncated gIIIp of filamentous phage with N-terminal myctail/amber codon | SphI, BbsI                 |                   | vector pIG10 | see M7-I |
| M8      | SphI-lox-HindIII     | Cre/lox recombination site                                               | none                       | lox               | (synthetic)  | see M3   |
| M9-II   | HindIII-lpp-PacI     | lpp-terminator                                                           | none                       | PacI, FseI        | (synthetic)  | see M1   |
| M10-II  | PacI/FseI-bla-BsrGI  | beta-lactamase/bla (ampR)                                                | Vspl, Eco57I, BssSI        | PacI, FseI, BsrGI | pASK30       | see M1   |
| M11-II  | BsrGI-f1 ori-NheI    | origin of single-stranded replication                                    | DraIII (BanII not removed) | BsrGI, NheI       | pASK30       | see M1   |
| M11-III | BsrGI-f1 ori-NheI    | origin of single-stranded replication                                    | DraIII, BanII              | BsrGI, NheI       | pASK30       | see M1   |

**FIG. 26B**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

|          |                      |                                                       |                            |                  |             |                                                                  |
|----------|----------------------|-------------------------------------------------------|----------------------------|------------------|-------------|------------------------------------------------------------------|
| M12      | NheI-p15A-BgIII      | origin of double-stranded replication                 | BssSI, VspI, NspV          | NheI, BgIII      | pACYC184    | Rose, R.E. (1988) Nucleic Acids Res. 16, 355                     |
| M13      | BglII-lox-BgIII      | Cre/lox recombination site                            | none                       | BglII, lox, XmnI | (synthetic) | see M3                                                           |
| M14-Ext2 | BglII-ColEI-NheI     | origin of double-stranded replication                 | Eco57I (BssSI not removed) | BglII, NheI      | pUC19       | Yanisch-Peron, C. (1985) Gene 33,103-119                         |
| M17      | AatII-cat-BgIII      | chloramphenicol-acetyltransferase/cat (camR)          | BspEI, MscI, StyI/NcoI     |                  | pACYC184    | Cardoso, M. & Schwarz, S. (1992) J. Appl. Bacteriol. 72, 289-293 |
| M19      | XbaI-phoA-EcoRI      | signal sequence of phosphatase A                      | (synthetic)                |                  | (synthetic) | see M1                                                           |
| M20      | XbaI-phoA-FLAG-EcoRI | signal sequence of phosphatase A + FLAG detection tag | (synthetic)                |                  | (synthetic) | Knappik, A & Plückthun, A. (1994) BioTechniques 17, 754-761      |

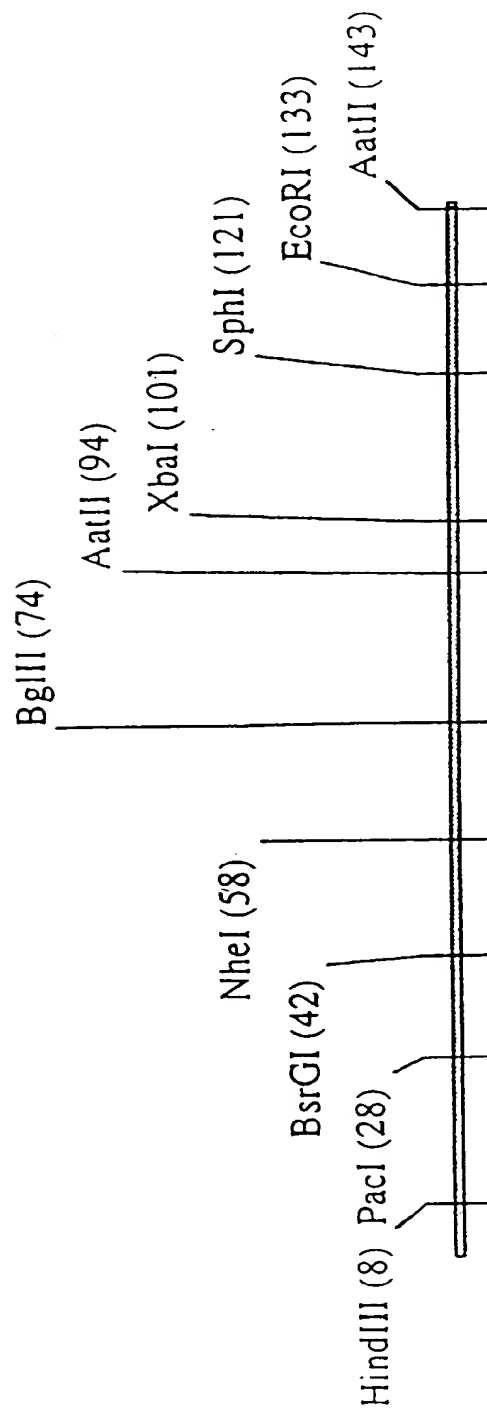
**FIG. 26C**

|           |                 |
|-----------|-----------------|
| APPROVED  | O.G. FIG.       |
| BY        | CLASS /SUBCLASS |
| DRAFTSMAN |                 |

|     |                       |                                            |                                                    |  |             |                                                                               |
|-----|-----------------------|--------------------------------------------|----------------------------------------------------|--|-------------|-------------------------------------------------------------------------------|
| M21 | XbaI-stII-SapI        | heat-stable enterotoxin II signal sequence | (synthetic)                                        |  | (synthetic) | Lee et al. (1983) Infect. Immunol. 264-268                                    |
| M41 | AfIII-lacI-NheI       | lac-repressor                              | BstXI, MluI, BbsI, BanII, BstEII, HpaI, BbeI, VspI |  | pASK30      | see M1                                                                        |
| M42 | EcoRI-Histail-HindIII | poly-histidine tail                        | (synthetic)                                        |  | (synthetic) | Lindner et al., (1992) Methods: a companion to methods in enzymology 4, 41-56 |

**FIG. 26D**

|           |                |
|-----------|----------------|
| APPROVED  | O.G. FIG.      |
| BY        | CLASS SUBCLASS |
| DRAFTSMAN |                |



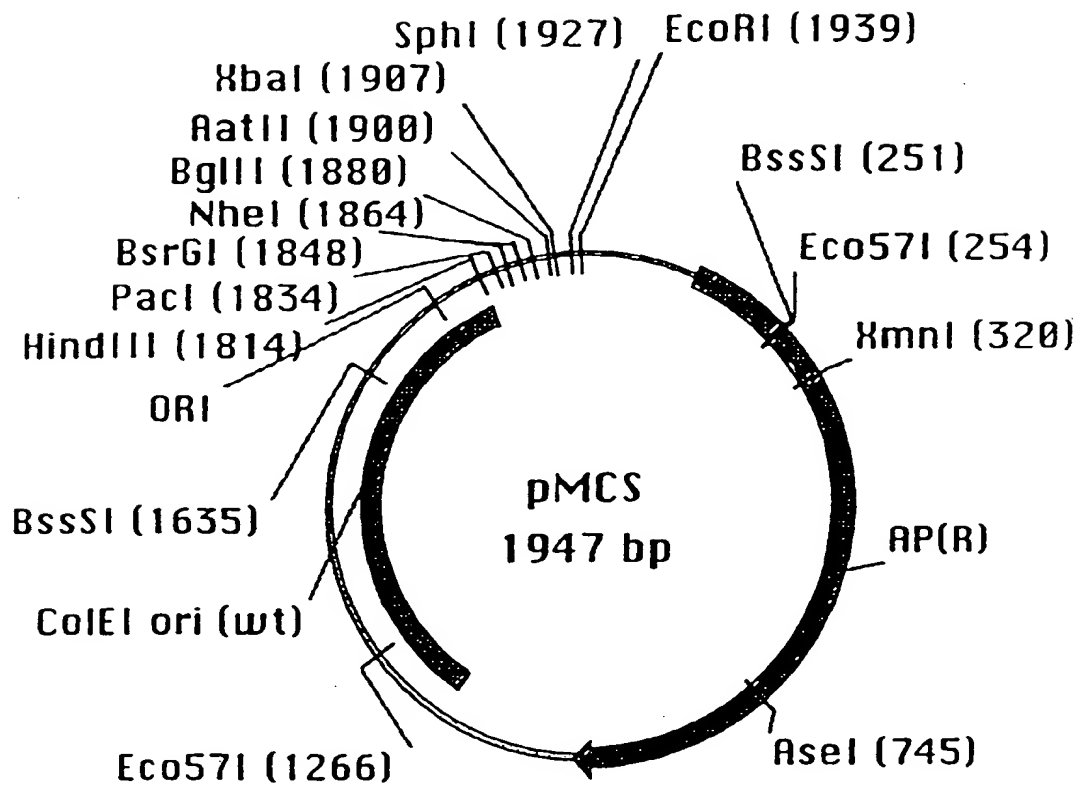
MCS  
143 bp  
**FIG. 27A**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

|     | HindIII                                                 | PacI  | BsrGI       |
|-----|---------------------------------------------------------|-------|-------------|
| 1   | ACATGTAAGC TTCCCCCCCC CCTTAATTAA CCCCCCCCCC TGACACCCCC  | ~~~~~ | ~~~~~       |
|     | TGTACATTTCG AAGGGGGGGG GGAATTAATT GGGGGGGGGG ACATGTGGGG |       |             |
|     |                                                         |       |             |
|     | NheI                                                    | BglII | AatII XbaI  |
|     | ~~~~~                                                   | ~~~~~ | ~~~~~       |
| 51  | CCCCCGCTA GCCCCCCCCC CCAGATCTCC CCCCCCCCCG CGTCCCCCCT   |       |             |
|     | GGGGGGCGAT CGGGGGGGGG GGTCTAGAGG GGGGGGGGGT GCAGGGGGGA  |       |             |
|     |                                                         |       |             |
|     | XbaI                                                    | SphI  | EcoRI AatII |
|     | ~~~~~                                                   | ~~~~~ | ~~~~~       |
| 101 | CTAGACCCCC CCCCCCGCATG CCCCCCCCCC CGAATTCGAC GTC        |       |             |
|     | GATCTGGGGG GGGGGCGTAC GGGGGGGGGG GCTTAAGCTG CAG         |       |             |

**FIG. 27B**

|           |                |
|-----------|----------------|
| APPROVED  | 0.6. FIG.      |
| BY        | CLASS SUBCLASS |
| DRAFTSMAN |                |



**FIG. 28A**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

```

1 CAGGTGGCAC TTTTCGGGGA AATGTGCGCG GAACCCCTAT TTGTTTATTT
 GTCCACCGTG AAAAGCCCCT TTACACGCGC CTGCGGATA AACAAATAAA

51 TTCTAAATAC ATTCAAATAT GTATCCGCTC ATGAGACAAAT AACCCTGATA
 AAGATTATG TAAGTTTATA CATAGGCGAG TACTCTGTTA TTGGGACTAT

101 AATGCTTCAA TAATATTGAA AAAGGAAGAG TATGAGTATT CAACATTTCC
 TTACGAAAGTT ATTATAACTT TTTCCCTTCTC ATACTCATAA GTTGTAAGG

151 GTGTCGCCCT TATTCCTTT TTTGCGGCAT TTTGCCCTTC TGTTTTTGCT
 CACAGCGGGA ATAAGGAAA AAACGCCGTA AAACGGAAGG ACAAAAACGA

 Eco57I
      ~~~~~

201 CACCCAGAAA CGCTGGTGAA AGTAAAGAT GCTGAAGATC AGTTGGGTGC
   GTGGGTCTTT GCGACCACTT TCATTTTCTA CGACTTCTAG TCAACCCACG
      BssSI
      ~~~~~

251 ACGAGTGGGT TACATCGAAC TGGATCTCAA CAGCGGTAAG ATCCTTGAGA
 TGCTCACCCA ATGTAGCTTG ACCTAGAGTT GTCGCCATTC TAGGAACCTC
 BssSI
      ~~~~~

```

**FIG. 28B**

|           |           |
|-----------|-----------|
| APPROVED  | O.G. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |

# XmnI

```

301 GTTTTCGCC CGAAGAACGT TTTCCAATGA TGAGCACTTT TAAAGTTCTG
    CAAAGCGGG GCTTCTTGCA AAAGTTACT ACTCGTGAA ATTTCAAGAC

351 CTATGTGGC CCGTATTATC CCGTATTGAC GCCGGGCAAG AGCAACTCGG
    GATACACGC GCCATAATAG GCATAACTG CGCCCCGTC TCGTTGAGCC

401 TCGCCGCATA CACTATTCTC AGAATGACTT GGTGAGTAC TCACCAGTCA
    AGCGGCGTAT GTGATAAGAG TCTTACTGAA CCAACTCATG AGTGGTCAGT

451 CAGAAAGCA TCTTACGGAT GGCATGACAG TAAGAGAATT ATGCAGTGCT
    GTCTTTTCGT AGAATGCCCTA CCGTACTGC ATTCTCTTAA TACGTCACGA

501 GCCATAACCA TGAGTGATAA CACTGCGGCC AACTTACTTC TGACAACGAT
    CGGTATTGGT ACTCACTATT GTGACGCCGG TTGAATGAAG ACTGTTGCTA

551 CGGAGGACCG AAGGAGCTAA CCGCTTTTTC GCACAACATG GGGGATCATG
    GCCTCCTGGC TTCCCTCGATT GCGGAAAAAA CGTGTGTAC CCCCTAGTAC

601 TAACTCGCCT TGATCGTTGG GAACCGGAGC TGAATGAAGC CATAACAAAC
    ATTGAGCGGA ACTAGCAACC CTTGGCCTCG ACTTACTTCG GTATGGTTTG

651 GACGAGCGTG ACACCACGAT GCCTGTAGCA ATGGCAACAA CGTTGCGCAA
  
```

FIG. 28C



|           |           |
|-----------|-----------|
| APPROVED  | 0.6. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |

CTGCTCGCAC TGTGGTGCTA CGGACATCGT TACCGTTGTT GCAACGCCGT

AseI  
 ~~~~~

701 ACTATTAACT GCGAACTAC TTACTCTAGC TTCCCGGCAA CAATTAATAG
 TGATAATTGA CCGCTTGATG AATGAGATCG AAGGCCGTT GTTAATTATC

751 ACTGGATGGA GCGGATAAA GTTGCAGGAC CACTTCTGCG CTCGGCCCTT
 TGACCTACCT CCGCCTATT CAACGTCCTG GTGAAGACGC GAGCCGGGAA

801 CCGGCTGGCT GGTATTGCG TGATAAATCT GGAGCCGGTG AGCGTGGGTC
 GGCCGACCGA CCAAATAACG ACTATTAGA CCTCGGCCAC TCGCACCCAG

851 TCGCGGTATC ATTGCAGCAC TGGGGCCAGA TGGTAAGCCC TCCCGTATCG
 AGCGCCATAG TAACGTCGTG ACCCCGGTCT ACCATTGCGG AGGGCATAGC

901 TAGTTATCTA CACGACGGGG AGTCAGGCAA CTATGGATGA ACGAAATAGA
 ATCAATAGAT GTGCTGCCCC TCAGTCCGTT GATACCTACT TGCTTTATCT

951 CAGATCGCTG AGATAGGTGC CTCACTGATT AAGCATTGGT AACTGTCAGA
 GTCTAGCGAC TCTATCCACG GAGTGACTAA TTCGTAACCA TTGACAGTCT

1001 CCAAGTTTAC TCATATATAC TTTAGATTGA TTTAAACTT CATTTTAAAT
 GGTTCAAATG AGTATATATG AAATCTAACT AAATTTTGAA GTAAAAATTA

FIG. 28D

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

```

1051  TTAAAAGGAT CTAGGTGAAG ATCCCTTTTGG ATAATCTCAT GACCAAAATC
      AATTTTCCTA GATCCACTTC TAGGAAAAC TATTAGAGTA CTGGTTTTAG

1101  CCTTAACGTG AGTTTTCGTT CCACTGAGCG TCAGACCCCG TAGAAAAGAT
      GGAATTGCAC TCAAAAGCAA GGTGACTCGC AGTCTGGGGC ATCTTTTCTA

1151  CAAAGGATCT TCTTGAGATC CTTTTHTTCT GCGCGTAATC TGCTGCTTGC
      GTTTCCTAGA AGAACTCTAG GAAAAAAGA CGCGCATAG ACGACGAACG

1201  AAACAAAAAA ACCACCGCTA CCAGCGGTGG TTTGTTTGCC GGATCAAGAG
      TTTGTTTTTT TGGTGCGGAT GGTGCGCCAC AAACAAACGG CCTAGTTCTC

1251  CTACCAACTC TTTTTCGGAA GGTAAGTGGC TTCAGCAGAG CGCAGATACC
      GATGGTTGAG AAAAAGGCTT CCATTGACCG AAGTCGTCTC GCGTCTATGG
                        Eco57I
                        ~~~~~

1301  AAATACTGTC CTTCTAGTGT AGCCGTAGTT AGGCCACCAC TTCAAGAACT
      TTTATGACAG GAAGATCACA TCGGCATCAA TCCGGTGGTG AAGTCTTGA

1351  CTGTAGCACC GCCTACATAC CTCGCTCTGC TAATCCTGTT ACCAGTGGCT
      GACATCGTGG CGGATGTATG GAGCGAGACG ATTAGACAA TGGTCACCGA
  
```

FIG. 28E

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

```

1401  GCTGCCAGTG GCGATAAGTC GTGTCTTACC GGGTTGGACT CAAGACGATA
      CGACGGTCAC CGCTATTTCAG CACAGAATGG CCCAACCTGA GTTCTGCTAT

1451  GTTACCGGAT AAGGCGCAGC GGTCCGGCTG AACGGGGGGT TCGTGCACAC
      CAATGGCCCTA TTCCGGCGTCG CCAGCCCCGAC TTGCCCCCCA AGCACGTGTG

1501  AGCCCAGCTT GGAGCGAACG ACCTACACCG AACTGAGATA CCTACAGCGT
      TCGGGTCGAA CCTCGCTTGC TGGATGTGGC TTGACTCTAT GGATGTCGCA

1551  GAGCTATGAG AAAGCGCCAC GCTTCCCGAA GGGAGAAAGG CCGACAGGTA
      CTCGATACTC TTTCGGCGGTG CGAAGGCTT CCCTCTTTCC GCCGTCCAT

1601  TCCGGTAAGC GGCAGGGTCG GAACAGGAGA GCGCACGAGG GAGCTTCCAG
      AGGCCATTTCG CCGTCCCAGC CTGTCTCTCT CGCGTGCTCC CTCGAAGGTC
                        BSSSI
                        ~~~~~

1651  GGGGAAACGC CTGGTATCTT TATAGTCCTG TCGGGTTTCC CCACCTCTGA
      CCCCTTTGCG GACCATAGAA ATATCAGGAC AGCCCAAAGC GTGGAGACT

1701  CTTGAGCGTC GATTTTGTG ATGCTCGTCA GGGGGCGCGA GCCTATGGAA
      GAACTCGCAG CTAAAAACAC TACGAGCAGT CCCCCCGCCT CGGATACCTT

1751  AAACGCCAGC AACGCGGCCT TTTTACGGTT CCTGGCCTTT TGCTGGCCTT
  
```

FIG. 28F

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

```

TTTGGGGTCG TTGGCCCGGA AAAATGCCAA GGACCGGAAA ACGACCGGAA

1801  TTGCTCACAT GTAAGCTTCC CCCCCCCTT AATTAACCC CCCCCCTGTA
      AACGAGTGTA CATTGGAAG GGGGGGGAA TTAATTGGG GGGGGACAT

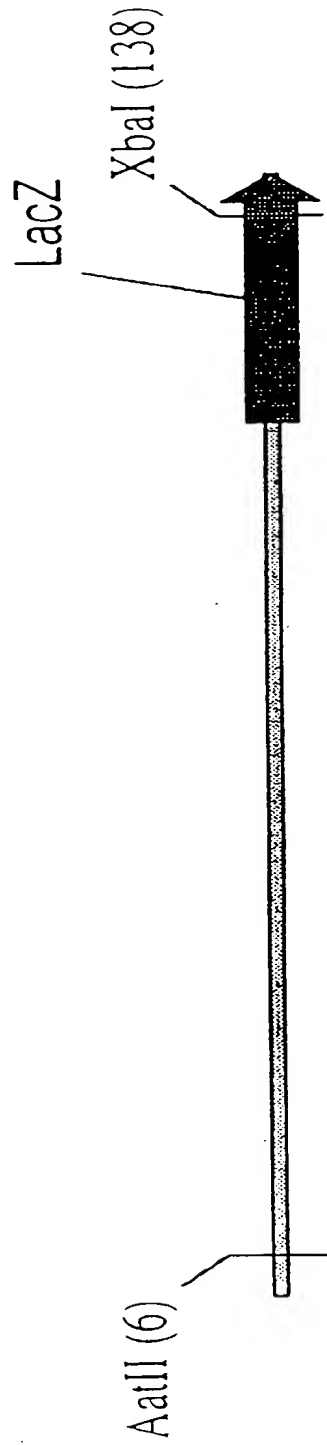
      HindIII      PacI      BsrGI
      ~~~~~      ~~~~~      ~~~~~
      1801  TTGCTCACAT GTAAGCTTCC CCCCCCCTT AATTAACCC CCCCCCTGTA
            AACGAGTGTA CATTGGAAG GGGGGGGAA TTAATTGGG GGGGGACAT

      BsrGI      NheI      BglII      AatII
      ~~~~      ~~~~~      ~~~~~      ~~~~~
      1851  CACCCCCCCC CCGCTAGCCC CCCCCCCCAG ATCTCCCCC CCGGACGTC
            GTGGGGGGGG GCGATCGGG GGGGGGGGTC TAGAGGGGG GGGGCTGCAG

            XbaI      SphI      EcoRI
            ~~~~~      ~~~~~      ~~~~~
      1901  CCCCCTCTAG ACCCCCCCCC CGCATGCCCC CCCCCCGAA TTCACGT
            GGGGAGATC TGGGGGGGG GCGTACGGG GGGGGGGCTT AAGTGCA
  
```

FIG. 28G

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

AatII
 ~~~~~  
 1 GACGTCCTTAA TGTGAGTTAG CTCACTCATT AGGCACCCCA GGCTTTACAC  
 CTGCAGAAATT ACACTCAATC GAGTGAGTAA TCCGTGGGGT CCGAAATGTG  
 51 TTTATGCTTC CGGCTCGTAT GTTGTGTGGA ATTGTGAGCG GATAACAATT  
 AAATACGAAG GCCGAGCATA CAACACACCT TAACACTCGC CTATTGTTAA  
 XbaI  
 ~~~~~  
 101 TCACACAGGA AACAGCTATG ACCATGATTA CGAATTCTA GA
 AGTGTGTCCT TTGTCGATAC TGGTACTAAT GCTTAAAGAT CT

FIG. 29B

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

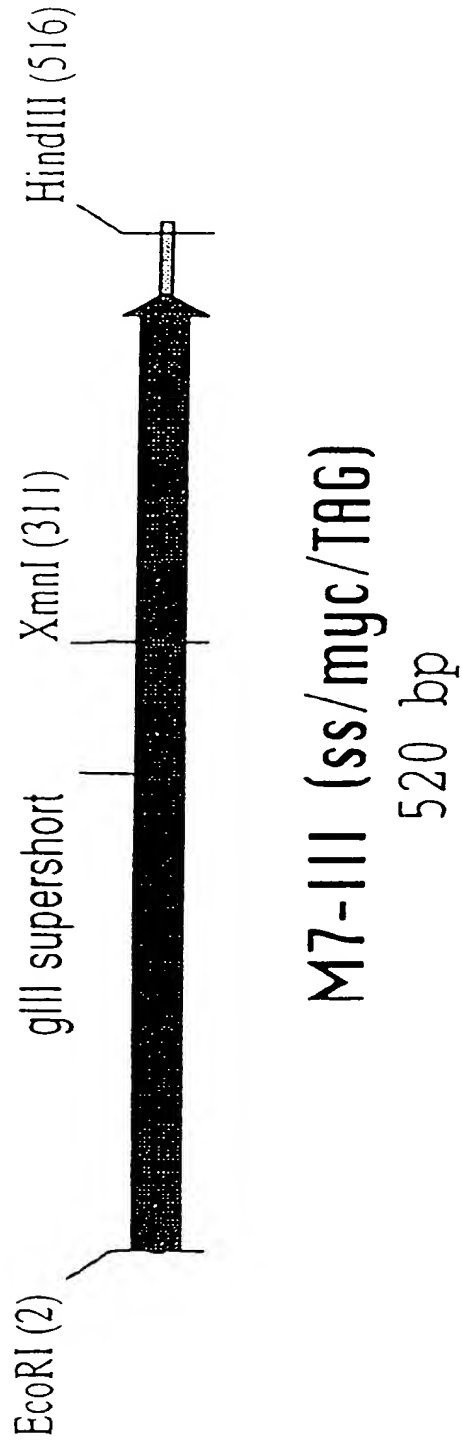


FIG. 30A

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

EcoRI
 ~~~~~  
 1 GAATTCGAGC AGAAGCTGAT CTCTGAGGAG GATCTGTAGG GTGGTGGCTC  
 CTTAAGCTCG TCTTCGACTA GAGACTCCTC CTAGACATCC CACCACCGAG  
  
 51 TGGTTCCGGT GATTTTGATT ATGAAAAGAT GGCAAACGCT AATAAGGGGG  
 ACCAAGGCCA CTAAAACTAA TACTTTTCTA CCGTTTGCGA TTATTCCCCC  
  
 101 CTATGACCGA AAATGCCGAT GAAACGGCG TACAGTCTGA CGCTAAAGGC  
 GATACTGGCT TTTACGGCTA CTTTGGCGG ATGTCAGACT GCGATTTCGG  
  
 151 AACTTGATT CTGTCGCTAC TGATTACGGT GCTGCTATCG ATGGTTTCAT  
 TTTGAACTAA GACAGCGATG ACTAATGCCA CGACGATAGC TACCATAAGTA  
  
 201 TGGTGACGTT TCCGGCCTTG CTAATGGTAA TGGTGCTACT GGTGATTTTG  
 ACCACTGCAA AGGCCGGAAC GATTACCATT ACCACGATGA CCACTAAAAC  
  
 251 CTGGCTCTAA TTCCCAAATG GCTCAAGTCG GTGACGGTGA TAATCACCT  
 GACCGAGATT AAGGGTTTAC CGAGTTCAGC CACTGCCACT ATTAAGTGGA  
  
 XmnI  
 ~~~~~  
 301 TTAATGAATA ATTTCCGTCA ATATTACCT TCCCTCCCTC AATCGGTTGA
 AATTACTTAT TAAAGGCAGT TATAAATGGA AGGAGGGGAG TTAGCCAACT

FIG. 30B

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

```

351 ATGTCGCCCT TTTGTCTTTG GCGCTGGTAA ACCATATGAA TTTTCTATTG
    TACAGCGGGA AAACAGAAAC CGCGACCAT TGGTATACTT AAAAGATAAC

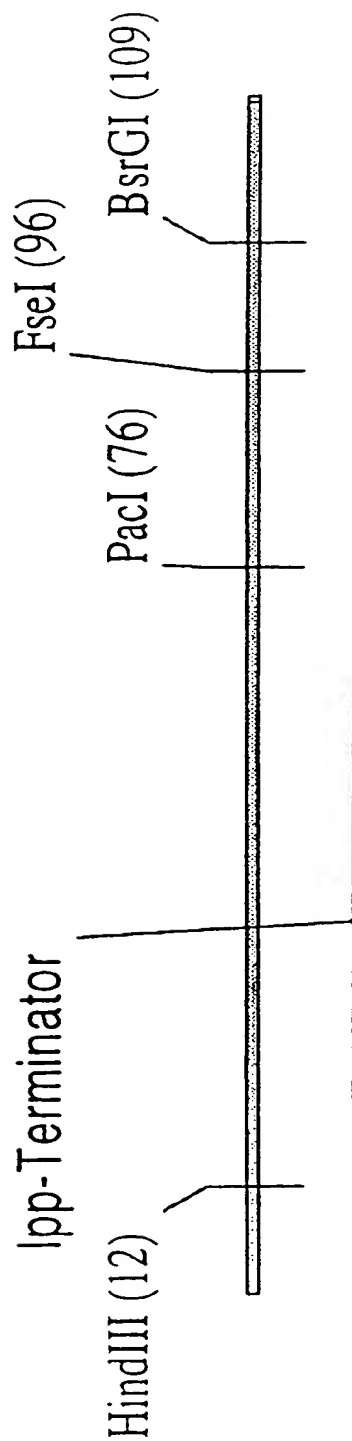
401 ATTGTGACAA AATAAACTTA TTCCGTGGTG TCCTTGCGGT TCTTTTATAT
    TAACACTGTT TTATTTGAAT AAGGCACCAC AGAAACGCCA AGAAAAATATA

451 GTTGCCACCT TTATGTATGT ATTTCTACG TTTGCTAACA TACTGCCGTAA
    CAACGGTGA AATACATACA TAAAGATGC AACGATTGT ATGACGCCATT

                    HindIII
                    ~~~~~
501 TAAGGAGTCT TGATAAGCTT
    ATTCCTCAGA ACTATTCCGA
  
```

FIG. 30C

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		



M9-II

123 bp

FIG. 31A

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

```

HindIII
~~~~~
1  GGGGGGGGG AGCTTGACC TGTGAAGTGA AAAATGGCGC AGATTGTGCG
   CCCCCCCCC TTCGAACTGG ACACTTCACT TTTTACCGCG TCTAACACGC

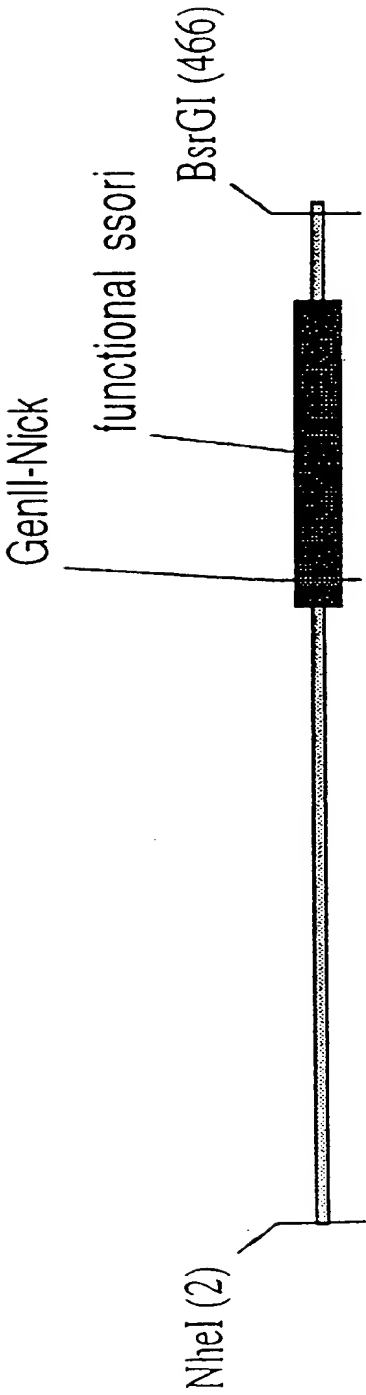
PacI
~~~~~
51 ACATTTT TGTCTGCCGT TTAATTAAAG GGGGGGGGGG GCCGGCCTGG
   TGTAATAAAA ACAGACGGCA AATTAATTTC CCCCCCCCC CGCCGGACC

FseI
~~~~~

BsrGI
~~~~~
101 GGGGGGGTGT ACAGGGGGG GGG
    CCCCCCACA TGTCCCCCCC CCC
  
```

FIG. 31B

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY		
DRAFTSMAN		



M11-III

470 bp

FIG. 32A

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

NheI
 ~~~~

|     |            |            |            |            |            |
|-----|------------|------------|------------|------------|------------|
| 1   | GCTAGCACGC | GCCCTGTAGC | GGCGCATTA  | GGCGGCGGG  | TGTGGTGGTT |
|     | CGATCGTGCG | CGGACATCG  | CCGCGTAATT | CGCGCGCCC  | ACACCACCAA |
| 51  | ACGCGCAGCG | TGACCGCTAC | ACTTGCCAGC | GCCCTAGCGC | CCGCTCCTTT |
|     | TGCGCGTCGC | ACTGGCGATG | TGAACGGTCG | CGGATCGCG  | GGCGAGGAAA |
| 101 | CGCTTTCTTC | CCTTCCTTTC | TCGCCACGTT | CGCCGGCTTT | CCCCGTCAAG |
|     | GGAAAGAAG  | GGAAGGAAAG | AGCGGTGCAA | CGGCGCGAAA | GGGCGAGTTC |
| 151 | CTCTAAATCG | GGGCATCCCT | TTAGGGTTCC | GATTAGTGC  | TTTACGGCAC |
|     | GAGATTTAGC | CCCGTAGGGA | AATCCCAAGG | CTAAATCAG  | AAATGCCGTG |
| 201 | CTCGACCCCA | AAAACTTGA  | TTAGGGTGAT | GGTTCTCGTA | GTGGGCCATC |
|     | GAGCTGGGGT | TTTTTGAAC  | AATCCCACTA | CCAAGAGCAT | CACCCGGTAG |
| 251 | GGCCTGATAG | ACGGTTTTTC | GCCCTTTGAC | GTTGGAGTCC | ACGTTCTTTA |
|     | CGGGACTATC | TGCCAAAAAG | CGGAAACTG  | CAACCTCAGG | TGCAAGAAAT |
| 301 | ATAGTGGACT | CTTGTTCCAA | ACTGGAACAA | CACCAACCC  | TATCTCGGTC |
|     | TATCACCTGA | GAACAAGGTT | TGACCTTGTT | GTGAGTTGG  | ATAGAGCCAG |
| 351 | TATTCTTTTG | ATTTATAAGG | GATTTGCCG  | ATTTCCGCCT | ATTGGTTAAA |

**FIG. 32B**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | D.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

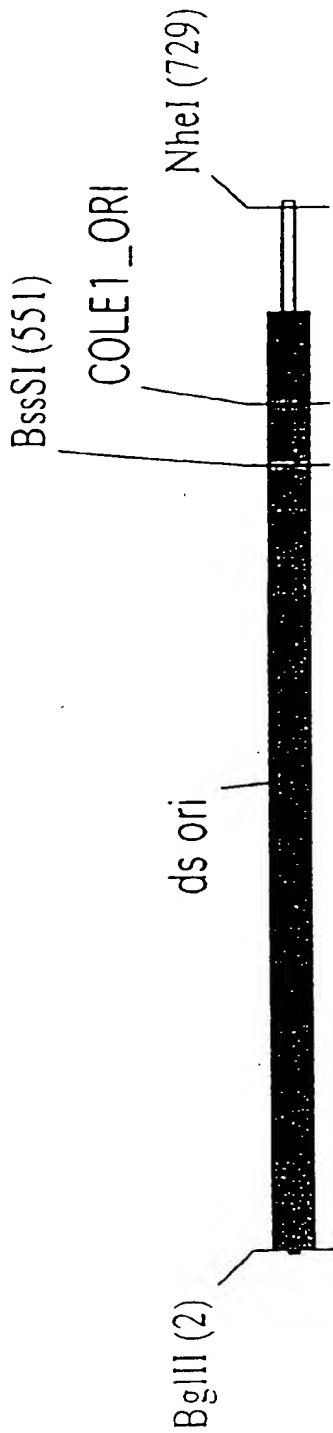
ATAAGAAAAC TAAATATTCC CTAAACGGC TAAAGCCGGA TAACCAATTT  
 401 AAATGAGCTG ATTTAACAAA AATTTAACGC GAATTTTAAC AAAATATTAA  
 TTTACTCGAC TAAATTGTTT TTAAATTGCG CTTAAAAATTG TTTTATAATT

BsrGI

~~~~~  
 451 CGTTTACAAT TTCATGTACA
 GCAAATGTTA AAGTACATGT

FIG. 32C

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS



M14-EXT2
733 bp
FIG. 33A

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

BglII

~~~~~

```

1  AGATCTGACC AAAATCCCTT AACGTGAGTT TTCGTTCCAC TGAGCGTCAG
   TCTAGACTGG TTTTAGGGAA TTGCACTCAA AAGCAAGGTG ACTCGCAGTC

51  ACCCCGTAGA AAAGATCAAA GGATCTTCTT GAGATCCCTTT TTTTCTGCGC
   TGGGGCATCT TTTCTAGTTT CCTAGAAGAA CTCTAGGAAA AAAAGACGCG

101  GTAATCTGCT GCTTGCAAAAC AAAAAACCA CCGCTACCAG CCGTG GTTG
   CATTAGACGA CGAACGTTTG TTTT TTTTGGT GCGGATGGTC GCCACCAAAC

151  TTTGCCGGAT CAAGAGCTAC CAACTCTTTT TCCGAAGGTA ACTGGCTACA
   AAACGGCCTA GTTCTCGATG GTTGAGAAA AGGCTTCCAT TGACCGATGT

201  GCAGAGCGCA GATACCAAAT ACTGTTCTTC TAGTGTAGCC GTAGTTAGGC
   CGTCTCGCGT CTATGGTTTA TGACAAGAAG ATCACATCGG CATCAATCCG

251  CACCACTTCA AGAACTCTGT AGCACCGCCT ACATACCTCG CTC TGCTAAT
   GTGGTGAAGT TCTTGAGACA TCGTGGCGGA TGTATGGAGC GAGACGATTA

301  CCTGTTACCA GTGGCTGCTG CCAGTGGCGA TAAGTCGTGT CTTACCGGGT
   GGACAATGGT CACCGACGAC GGTCACCGCT ATTCAGCACA GAA TGCGCCCA

351  TGGACTCAAG ACGATAGTTA CCGGATAAGG CGCAGCGGTC GGGCTGAACG
  
```

FIG. 33B



|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

```

ACCTGAGTTC TGCTATCAAT GGCCTATTCC GCGTCGCCAG CCCGACTTGC

401 GGGGGTTCGT GCACACAGCC CAGCTTGGAG CGAACGACCT ACACCGAACT
    CCCCCAAGCA CGTGTGTCGG GTCGAACCTC GCTTGCTGGA TGTGGCTTGA

451 GAGATACCTA CAGCGTGAGC TATGAGAAAG CGCCACGCTT CCCGAAGGGA
    CTCATATGGAT GTCGCAATCG ATACTCTTTC GCGGTGCGAA GGGCTTCCCT

501 GAAAGGCGGA CAGGTATCCG GTAAGCGGCA GGTTCGGAAC AGGAGAGCGC
    CTTTCCGCCCT GTCCATAGGC CATTCGCCGT CCCAGCCTTG TCCTCTCGCG
    BssSI

551 ACGAGGGAGC TTCCAGGGGG AAACGCCCTGG TATCTTTATA GTCCTGTCCG
    TGCTCCCTCG AAGGTCCCCC TTTGCGGACC ATAGAAATAT CAGGACAGCC
    BssSI
    ~~~~

601 GTTTCGCCAC CTCTGACTTG AGCGTCGATT TTTGTGATGC TCGTCAGGGG
 CAAAGCGGTG GAGACTGAAC TCGCAGCTAA AAACACTACG AGCAGTCCCC

651 GCGGGAGCCT ATGGAAAAC GCCAGCAACG CGGCCTTTT ACGGTTCCCTG
 CCGCCTCGGA TACCTTTTTC GGTGCTTGC GCCGAAAAA TGCCAAGGAC

```

**FIG. 33C**

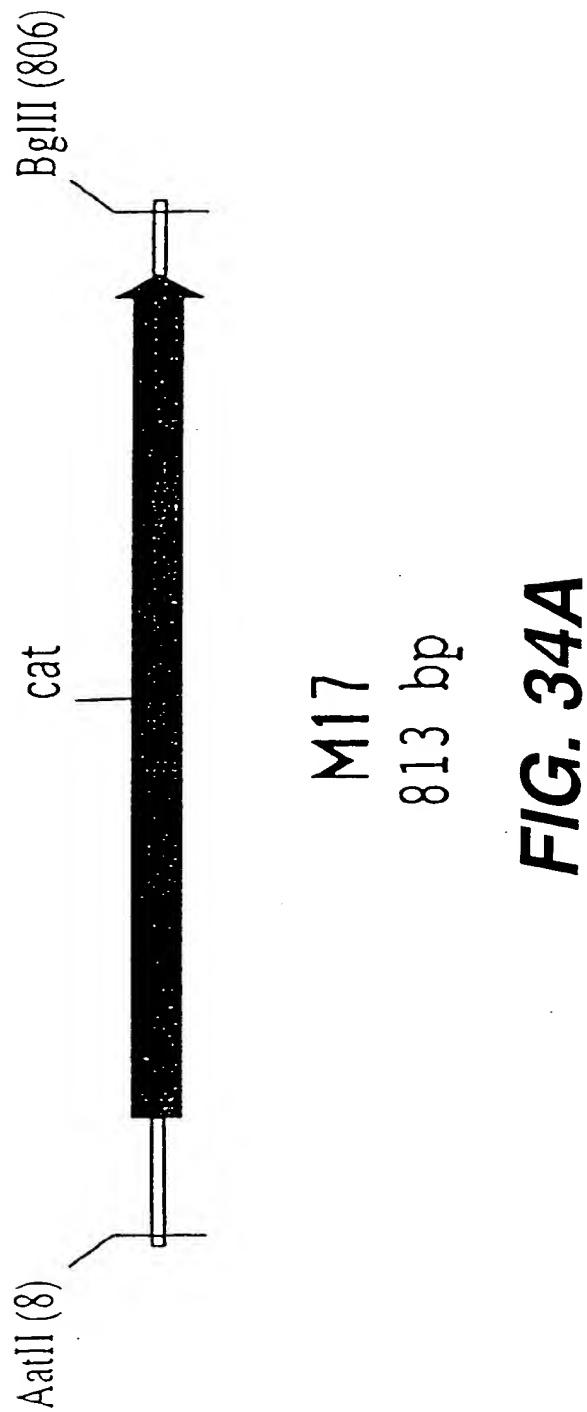
|           |           |
|-----------|-----------|
| APPROVED  | O.G. FIG. |
| BY        | CLASS     |
| DRAFTSMAN | SUBCLASS  |

701      GCCTTTGGCT    GGCCTTGGC    TCACATGGCT    AGC  
         CGGAAACGA    CCGGAAACG    AGGTACCGA    TCG

NheI  
~~~~~

**FIG. 33D**

APPROVED	D.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		



APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

# AatII

~~~~~

|     |             |            |             |             |             |
|-----|-------------|------------|-------------|-------------|-------------|
| 1   | GGGACGTCGG  | GTGAGGTTCC | AACTTTCACC  | ATAATGAAAT  | AAGATCACTA  |
|     | CCCTGCAGCC  | CACTCCAAGG | TTGAAAGTGG  | TATTAATTTA  | TTCTAGTGAT  |
| 51  | CCGGGCGGTAT | TTTTTGAGTT | ATCGAGATTT  | TCAGGAGCTA  | AGGAAGCTAA  |
|     | GGCCCGCATA  | AAAAACTCAA | TAGCTCTAAA  | AGTCCCTCGAT | TCCTTCGATT  |
| 101 | AATGGAGAAA  | AAAATCACTG | GATATACCAC  | CGTTGATATA  | TCCCAATGGC  |
|     | TTACCTCTTT  | TTTTAGTGAC | CTATATGGTG  | GCAACTATAT  | AGGGTTACCG  |
| 151 | ATCGTAAAGA  | ACATTTTGAG | GCATTTTCAGT | CAGTTGCTCA  | ATGTACCCTAT |
|     | TAGCATTTCT  | TGTAAAACTC | CGTAAAGTCA  | GTCACCGAGT  | TACATGGGATA |
| 201 | AACCAGACCG  | TTCAGCTGGA | TATTACGGCC  | TTTTTTAAAGA | CCGTAAAGAA  |
|     | TTGGTCTGGC  | AAGTCGACCT | ATAATGCCCG  | AAAAATTCTT  | GGCATTTCTT  |
| 251 | AAATAAGCAC  | AAGTTTATC  | CGCCTTTAT   | TCACATTCTT  | GCCCCCCTGA  |
|     | TTTATTTCGTG | TTCAAAATAG | GCCGGAATA   | AGTGTAAGAA  | CGGGCGGACT  |
| 301 | TGAATGCTCA  | CCCGGAGTTC | CGTATGGCAA  | TGAAAGACGG  | TGAGCTGGTG  |
|     | ACTTACGAGT  | GGGCCTCAAG | GCATACCGTT  | ACTTTCTGCC  | ACTCGACCAC  |
| 351 | ATATGGGATA  | GTGTTACCCC | TTGTTACACC  | GTTTTCCATG  | AGCAAACCTGA |

FIG. 34B

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

|     |             |             |            |            |             |
|-----|-------------|-------------|------------|------------|-------------|
|     | TATACCCCTAT | CACAAGTGGG  | AACAATGTGG | CAAAAGGTAC | TCGTTTGACT  |
| 401 | AACGTTTCA   | TCGCTCTGGA  | GTGAATACCA | CGACGATTTC | CGGCAGTTTC  |
|     | TTGCAAAAGT  | AGCGAGACCT  | CACTTATGGT | GCTGCTAAAG | GCCGTCAAAG  |
| 451 | TACACATATA  | TTCGCAAGAT  | GTGGCGTGT  | ACGGTGAAA  | CCTGGCCTAT  |
|     | ATGTGTATAT  | AAGCGTTCTA  | CACCGCACAA | TGCCACTTTT | GGACCGGATA  |
| 501 | TTCCCTAAAG  | GGTTTATTGA  | GAATATGTTT | TTCGTCTCAG | CCAATCCCCTG |
|     | AAGGGATTTC  | CCAAATAACT  | CTTATACAAA | AAGCAGAGTC | GGTTAGGGAC  |
| 551 | GGTGAGTTTC  | ACCAGTTTTC  | ATTTAAACGT | AGCCAATATG | GACAACTTCT  |
|     | CCACTCAAAG  | TGCTCAAAAC  | TAAATTGCA  | TCGGTTATAC | CTGTTGAAGA  |
| 601 | TCGCCCCCGT  | TTTCACTATG  | GGCAAATATT | ATACGCAAGG | CGACAAGGTG  |
|     | AGCGGGGGCA  | AAAGTGATAC  | CCGTTTATAA | TATGCGTTCC | GCTGTTCCAC  |
| 651 | CTGATGCCGC  | TGGCGATTCA  | GGTTCATCAT | GCCGTTTGTG | ATGGCTTCCA  |
|     | GACTACGGCG  | ACCGCTAAGT  | CCAAGTAGTA | CGGCAACAC  | TACCGAAGGT  |
| 701 | TGTCGGCAGA  | ATGCTTAATG  | AATTACAACA | GTACTGCGAT | GAGTGGCAGG  |
|     | ACAGCCGTCT  | TACGAAATTAC | TTAATGTTGT | CATGACGCTA | CTCACCGTCC  |
| 751 | GCGGGGCGTA  | ATTTTTTTAA  | GGCAGTTATT | GGGTGCCCTT | AAACGCCCTGG |

**FIG. 34C**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

CGCCCCGCAT TAAAAAATT CCGTCAATAA CCCACGGGAA TTTGCCGGACC

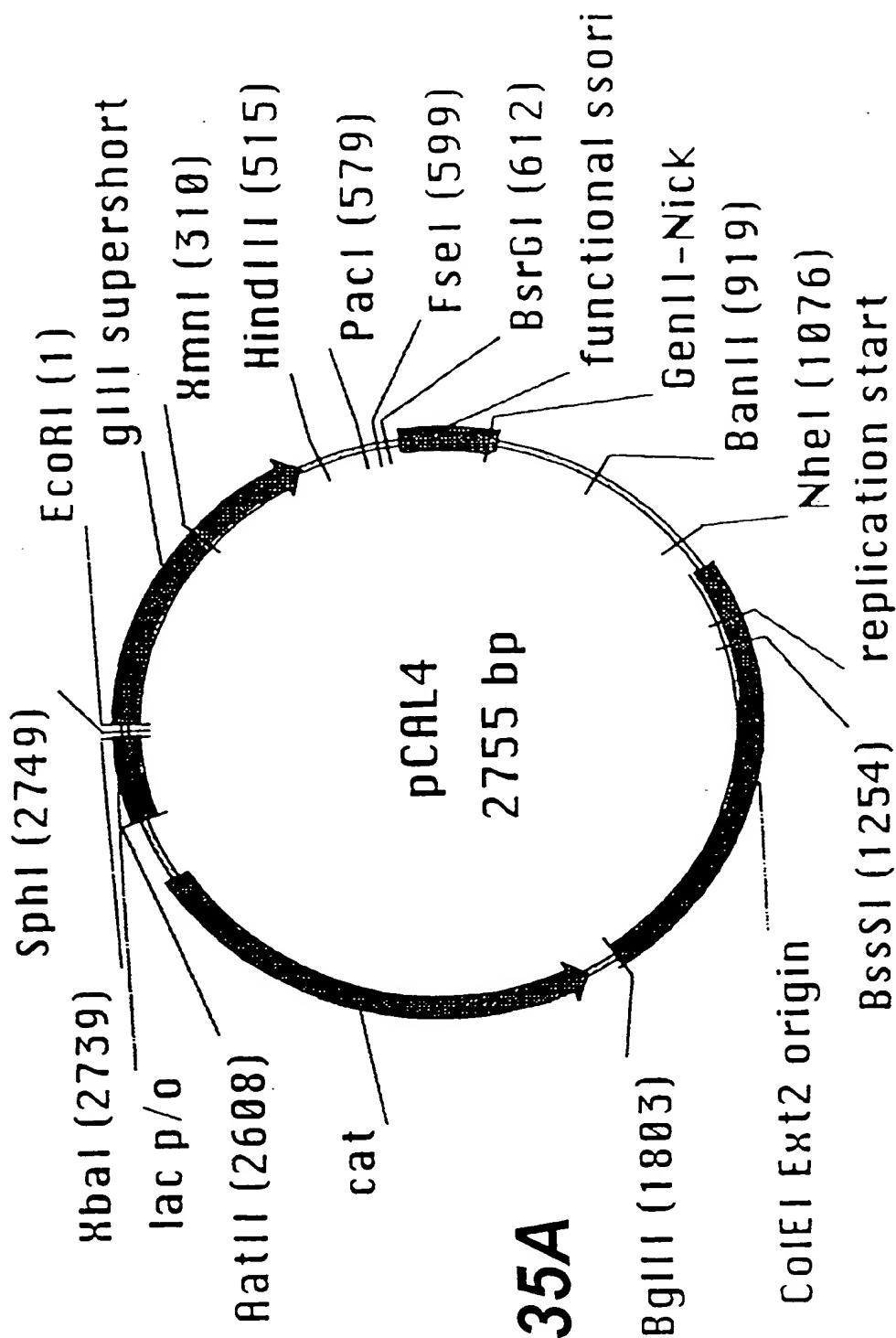
BglII

~~~~~

801 TGCTAGATCT TCC  
ACGATCTAGA AGG

**FIG. 34D**

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS



**FIG. 35A**

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

ECORI

```

1 AATTCGAGCA GAAGCTGATC TCTGAGGAGG ATCTGTAGGG TGGTGGCTCT
 TTAAGCTCGT CTTCGACTAG AGACTCCTCC TAGACATCCC ACCACCGAGA

51 GGTTCGGGTG ATTTTGATTA TGAAAAGATG GCAAACGCTA ATAAGGGGGC
 CCAAGGCCAC TAAAACTAAT ACTTTTCTAC CGTTGCGAT TATTCCCCCG

101 TATGACCGAA AATGCCGATG AAAACGCGCT ACAGTCTGAC GCTAAAGGCA
 ATACTGGCTT TTACGGCTAC TTTTGGCGGA TGTCAGACTG CGATTTCCGT

151 AACTTGATTC TGTCGCTACT GATTACGGTG CTGCTATCGA TGGTTTCATT
 TTGAACTAAG ACAGCGATGA CTAATGCCAC GACGATAGCT ACCAAAGTAA

201 GGTGACGTTT CCGGCCCTTG CTAATGGTAAT GGTGCTACTG GTGATTTTGC
 CCACTGCAAA GGCCGGAACG ATTACCATT A CCACGATGAC CACTAAAACG

251 TGGCTCTAAT TCCCAAATGG CTCAGTCGG TGACGGTGAT AATTCACCTT
 ACCGAGATTA AGGGTTTACC GAGTTCAGCC ACTGCCACTA TTAAGTGGAA

XmnI
~~~~~
301 TAATGAATAA TTTCCGTCAA TATTACCTT CCTCCCTCA ATCGGTTGAA
   ATTACTTATT AAAGGCAGTT ATAAATGGAA GGGAGGGAGT TAGCCAACTT
  
```

**FIG. 35B**



APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

```

351  TGTGCGCCCTT TTGTCTTTGG CGTGGTAAA CCATATGAAT TTTCTATTGA
    ACAGCGGGAA AACAGAAACC GCGACCATTT GGTATACTTA AAAGATAAAT
401  TTGTGACAAA ATAAACTTAT TCCGTGGTGT CTTTGCGTTT CTTTATATATG
    AACACTGTTT TATTTGAATA AGGCACCACA GAAACGCCAA GAAAATATATC
451  TTGCCACCTT TATGTATGTA TTTTCTACGT TTGCTAACAT ACTGCGTAAT
    AACGGTGGAA ATACATACAT AAAAGATGCA AACGATTGTA TGACGCATTA

      HindIII
      ~~~~~
501 AAGGAGTCTT GATAAGCTTG ACCTGTGAAG TGAAAAATGG CGCAGATTGT
 TTCCTCAGAA CTATTCGAAC TGGACACTTC ACTTTTACC GCGTCTAACA

 PacI
      ~~~~~
551  GCGACATTTT TTTTGTCTGC CGTTTAATTA AAGGGGGGG GGGCCCGGCC
    CGCTGTAAAA AAAACAGACG GCAAATTAAT TTCCCCCCCC CCCC GGCCGG

      BsrGI
      ~~~~~
601 TGGGGGGGGG TGTACATGAA ATTGTAAACG TTAATATTTT GTTAAATTC
 ACCCCCCCCC ACATGTACTT TAACATTTTC AATTATAAAA CAATTTTAAG

```

**FIG. 35C**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

```
651 GCGTTAAATT TTTGTTAAAT CAGCTCATTT TTTAACCAAT AGGCCGAAAT
 CGCAATTTAA AAACAATTAA GTCGAGTAAA AAATTGGTTA TCCGGCTTTA

701 CGGCAAAATC CCTTATAAAT CAAAGAATA GACCGAGATA GGGTTGAGTG
 GCCGTTTTAG GGAATATTAA GTTTTCTTAT CTGGCTCTAT CCCAACTCAC

751 TTGTTCCAGT TTGGAACAAG AGTCCACTAT TAAAGAACGT GGACTCCAAC
 AACAAAGTCA AACCTTGTC TCAGTGATA ATTTCTTGCA CCTGAGGTG

801 GTCAAAGGGC GAAAACCGT CTATCAGGGC GATGGCCCCAC TACGAGAACCC
 CAGTTTCCCG CTTTTTGGCA GATAGTCCCG CTACCGGGTG ATGCTCTTGG

851 ATCACCCCTAA TCAAGTTTTT TGGGTCGAG GTGCCGTAAA GCACTAAATC
 TAGTGGGATT AGTTCAAAAA ACCCCAGCTC CACGGCATTT CGTGATTTAG

 BanII
          ~~~~~

901 GGAACCCCTAA AGGGAGCCCC CGATTTAGAG CTTGACGGGG AAAGCCGGCG
    CCTTGGGATT TCCCTCGGGG GCTAAATCTC GAACTGCCCC TTTCGGCCCG

951 AACGTGGCGA GAAAGGAAGG GAAGAAAGCG AAAGGAGCGG CGCCTAGGGC
    TTGCACCGCT CTTTCCTTCC CTTCTTTCCG TTTCCTCGCC CGCGATCCCC
```

**FIG. 35D**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

1001	GCTGGCAAGT	GTAGCGGTCA	CGTGCGCGT	AACCACCACA	CCGCGCGCGC
	CGACCGTTCA	CATCGCCAGT	GCGACGCGCA	TTGGTGGTGT	GGCGGCGCGC
NheI					
1051	TTAATGCGCC	GCTACAGGGC	GCGTGCTAGC	CATGTGAGCA	AAAGGCCAGC
	AATTACGCGG	CGATGTCCCG	GCGACGATCG	GTACACTCGT	TTTCCGGTCC
1101	AAAAGGCCAG	GAACCGTAAA	AAGGCCGCGT	TGCTGGCGTT	TTTCCATAGG
	TTTCCGGGTC	CTTGCCATTT	TTCCGGCGCA	ACGACCGCAA	AAAGGTATCC
1151	CTCCGCCCCC	CTGACGAGCA	TCACAAAAT	CGACGCTCAA	GTCAGAGGTG
	GAGCGGGGGG	GACTGCGCGT	AGTGTTTTA	GCTGCGAGTT	CAGTCTCCAC
1201	GCGAAACCCG	ACAGGACTAT	AAAGATACCA	GGCGTTTCCC	CCTGGAAGCT
	CGCTTTGGGC	TGTCCCTGATA	TTTCTATGGT	CCGCAAAGGG	GGACCTTCGA
BssSI					
1251	CCCTCGTGCG	CTCTCCTGTT	CCGACCCCTGC	CGCTTACCGG	ATACCTGTCC
	GGGAGCACGC	GAGAGGACAA	GGCTGGGACG	GCGAATGGCC	TATGGACAGG
1301	GCCTTTCTCC	CTTCGGGAAG	CGTGGCGCTT	TCTCATAGCT	CACGCTGTAG
	CGGAAAGAGG	GAAGCCCTTC	GCACCGCGAA	AGAGTATCGA	GTGCGACATC

**FIG. 35E**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

1351	GTATCTCAGT	TCGGTGTAGG	TCGTTGCGCTC	CAAGCTGGGC	TGTGTGCACG
	CATAGAGTCA	AGCCACATCC	AGCAAGCGAG	GTTGACCCCG	ACACACGTGC
1401	AACCCCCCGT	TCAGCCCGAC	CGTGCGCCCT	TATCCGGTAA	CTATCGTCTT
	TTGGGGGGCA	AGTCGGGCTG	GCGACGCGGA	ATAGGCCATT	GATAGCAGAA
1451	GAGTCCAACC	CGTAAGACA	CGACTTATCG	CCACTGGCAG	CAGCCACTGG
	CTCAGGTTGG	GCCATTCTGT	GCTGAATAGC	GGTGACCGTC	GTCGGTGACC
1501	TAACAGGATT	AGCAGAGCGA	GGTATGTAGG	CGGTGCTACA	GAGTTCTTGA
	ATTGTCCCTAA	TCGTCTCGCT	CCATACATCC	GCCACGATGT	CTCAAGAACT
1551	AGTGGTGGCC	TAACTACGGC	TACACTAGAA	GAACAGTATT	TGGTATCTGC
	TCACCCACCGG	ATTGATGCCG	ATGTGATCTT	CTTGTCATAA	ACCATAGACG
1601	GCTCTGCTGT	AGCCAGTTAC	CTTCGGAAAA	AGAGTTGGTA	GCTCTTGATC
	CGAGACGACA	TCGGTCAATG	GAAGCCTTTT	TCTCAACCAT	CGAGAACTAG
1651	CGGCAAAACAA	ACCACCGCTG	GTAGCGGTGG	TTTTTTTGT	TGCAAGCAGC
	GCCGTTTGTT	TGGTGCGGAC	CATCGCCACC	AAAAAAACAA	ACGTTTCGTG
1701	AGATTACGCG	CAGAAAAAAA	GGATCTCAAG	AAGATCCTTT	GATCTTTTCT
	TCTAATGCGC	GTCTTTTTTT	CCTAGAGTTC	TTCTAGGAAA	CTAGAAAAAG

**FIG. 35F**

APPROVED	D.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSHAH		

1751	ACGGGGTCTG	ACGCTCAGTG	GAACGAAAAC	TCACGTTAAG	GGATTTTGGT
	TGCCCCAGAC	TGCGAGTCAC	CTTGCTTTTG	AGTGCAATTC	CCTAAAACCA
	BglII				
	~~~~~				
1801	CAGATCTAGC	ACCAGGCGTT	TAAGGGCACC	AATAACTGCC	TTAAAAAAT
	GTCTAGATCG	TGTCCGCAA	ATCCCGTGG	TTATTGACGG	AATTTTSTA
1851	TACGCCCCCGC	CCTGCCACTC	ATCGCAGTAC	TGTTGTAATT	CATTAAGCAT
	ATGCGGGGCG	GGACGGTGAG	TAGCGTCATG	ACAACATTAA	GTAATTCTGA
1901	TCTGCCCCGACA	TGGAAGCCAT	CACAAACGGC	ATGATGAACC	TGAATCGCCA
	AGACGGCTGT	ACCTTCGGTA	GTGTTTGCCG	TACTACTTGG	ACTTAGCCGT
1951	GCGGCATCAG	CACCTTGTCG	CCTTGCGTAT	AAATATTGCC	CATAGTGAAA
	CGCCGTAGTC	GTGGAACAGC	GGAACGCATA	TTATAAACGG	GTATCACTTT
2001	ACGGGGGCGA	AGAAATTGTC	CATATTGGCT	ACGTTTAAAT	CAAAACTGGT
	TGCCCCCGCT	TCTTCAACAG	GTATAACCGA	TGCAAAATTA	GTTTGACCA
2051	GAAACTCACC	CAGGGATTGG	CTGAGACGAA	AAACATATTC	TCAATAAACC
	CTTTGAGTGG	GTCCCTAACC	GACTCTGCTT	TTTGTATAAG	AGTTATTGG

FIG. 35G

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

2101	CTTAGGGAA ATAGGCCAGG TTTTCACCGT AACACGCCAC ATCTTGCGAA	GAAATCCCTT TATCCGCTCC AAAAGTGGCA TTGTGCGGTG TAGAACGCTT
2151	TATATGTGTA GAAACTGCCG GAAATCGTCG TGGTATTCAC TCCAGAGCGA	ATATACACAT CTTTGACGGC CTTTAGCAGC ACCATAAGTG AGGTCTCGCT
2201	TGAAAACGTT TCAGTTTGCT CATGGAAAAC GGTGTAACAA GGTGAACAC	ACTTTTGCAA AGTCAAACGA GTACCTTTTG CCACATTGTT CCCACTTGTC
2251	TATCCCATAT CACCAGCTCA CCGTCTTTCA TTGCCATACG GAACTCCGGG	ATAGGGTATA GTGGTCGAGT GGCAGAAAGT AACGGTATGC CTTGAGGCC
2301	TGAGCATTCA TCAGCGGGC AAGAATGTGA ATAAAGGCCG GATAAACTT	ACTCGTAAGT AGTCCGCCCG TTCTTACACT TATTTCCGGC CTATTTTGAA
2351	GTGCTTATTT TTCCTTACGG TCTTTAAAAA GGCCGTAATA TCCAGCTGAA	CACGAATAAA AAGAAATGCC AGAAATTTT CCGGCATTAT AGGTCGACTT
2401	CGGTCGTGTT ATAGGTACAT TGAGCAACTG ACTGAAATGC CTCAAAATGT	GCCAGACCAA TATCCATGTA ACTCGTTGAC TGACTTTACG GAGTTTTACA
2451	TCCTTACGAT GCCATTGGGA TATATCAACG GTGGTATATC CAGTGATTTT	AGAAAATGCTA CGGTAACCCCT ATATAGTTGC CACCATATAG GTCACTAAAA

FIG. 35H

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

2501 TTTCTCCATT TTAGCTTCCT TAGCTCCTGA AAATCTCGAT AACTCAAAAA
 AAAGAGGTAA AATCGAAGGA ATCGAGGACT TTTAGAGCTA TTGAGTTTTT

2551 ATACGCCCGG TAGTGATCTT ATTCATTAT GGTGAAAGTT GGAACCTCAC
 TATGCGGGCC ATCACTAGAA TAAAGTAATA CCACTTTCAA CCTTGGAGTG

AatII

~~~~~

2601 CCGACGTCTA ATGTGAGTTA GCTCACTCAT TAGGCACCCC AGGCTTTACA  
 GGCTGCAGAT TACACTCAAT CGAGTGAGTA ATCCGTGGGG TCCGAAATGT

2651 CTTTATGCTT CCGGCTCGTA TGTGTGTGG AATTGTGAGC GGATAACAAT  
 GAAATACGAA GGCCGAGCAT ACAACACACC TTAACACTCG CCTATTGTTA

XbaI SphI

~~~~~

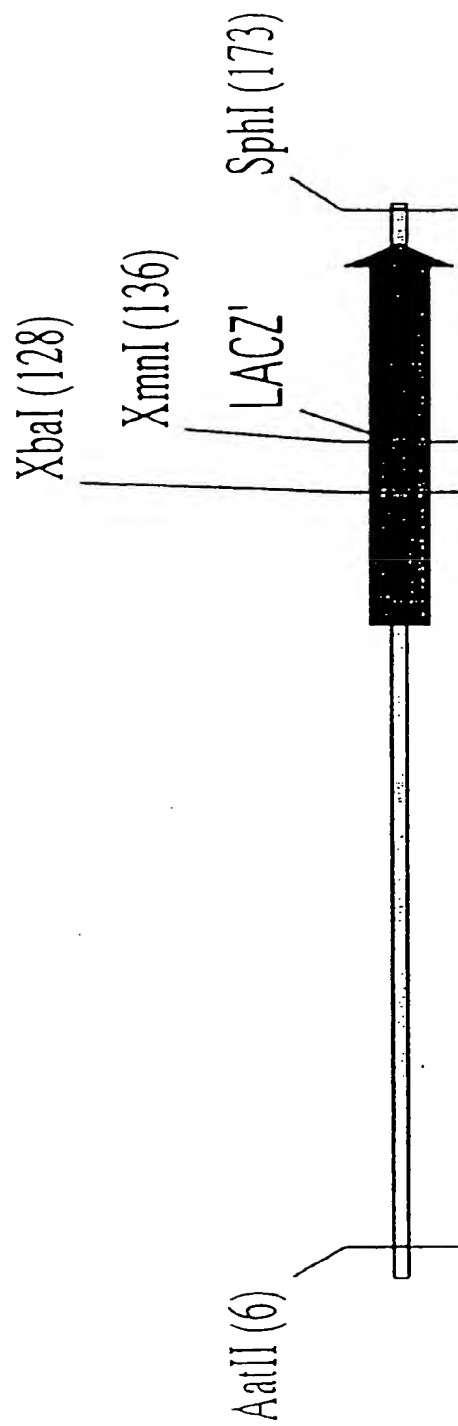
2701 TTCACACAGG AAACAGCTAT GACCATGATT ACGAATTTCT AGAGCATGCG
 AAGTGTGTCC TTGTGCGATA CTGGTACTAA TGCTTAAAGA TCTCGTACGC

EcoRI

2751 GGGGG
 CCCCC

FIG. 35I

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		



M2
173 bp
FIG. 35J

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

M 2:

AatII

~~~~~

1 GACGTCCTTAA TGTGAGTTAG CTCACTCATT AGGCACCCCA GGCTTTACAC  
 CTGCAGAATT ACACTCAATC GAGTGAGTAA TCCGTGGGGT CCGAAATGTG

51 TTTATGCTTC CGGCTCGTAT GTTGTGTGGA ATTGTGAGCG GATAACAATT  
 AAATACGAAG GCCGAGCATA CAACACACCT TAACACTCGC CTATTGTTAA

XmnI

~~~~~

XbaI

~~~~~

101 TCACACAGGA AACAGCTATG ACCATGTCTA GAATAACTTC GTATAATGTA  
 AGTGTGTCCT TTGTCGATAC TGGTACAGAT CTTATTGAAG CATATTACAT

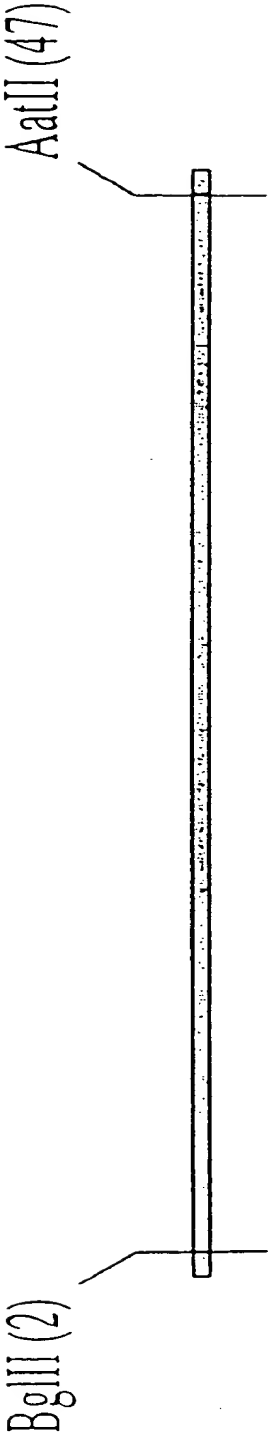
SphI

~~~~~

151 CGCTATACGA AGTTATCGCA TGC
 GCGATATGCT TCAATAGCGT ACG

FIG. 35K

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		



M3
47 bp
FIG. 35L

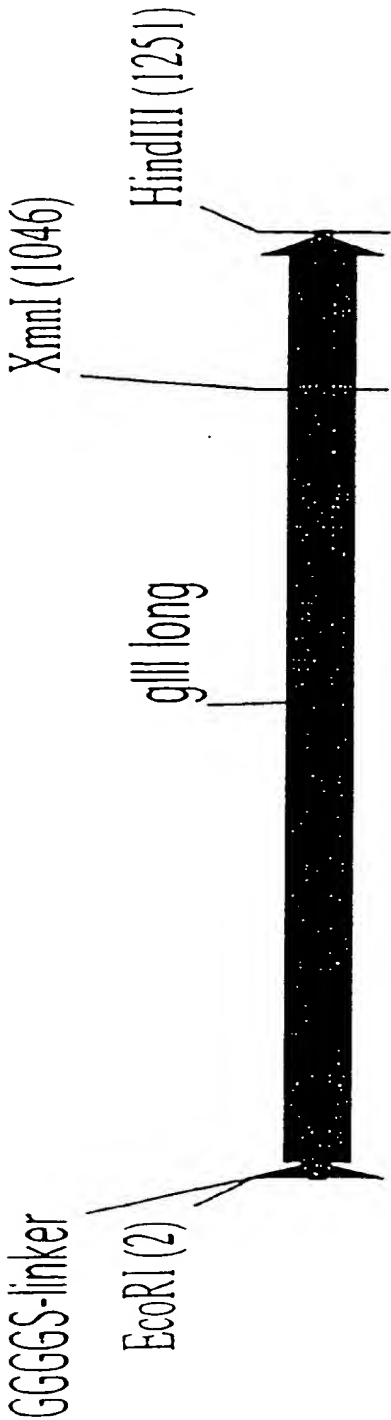
APPROVED	C.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

M 3:

	BglII	AatII
	-----	-----
1	AGATCTCATA ACTTCGTATA ATGTATGCTA TACGAAGTTA TGACGTC	
	TCTAGAGTAT TGAAGCATAT TACATACGAT ATGCTTCAAT ACTGCAG	

FIG. 35M

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS



M7-I (long)
1255 bp
FIG. 35N

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

M 7-I (long):

ECORI

1	GAATTCGGTG	GTGGTGGATC	TGCGTGCGCT	GAAACGGTGT	AAAGTTGTTT
	CTTAAGCCAC	CACCACCTAG	ACGCACGCCA	CTTGTCCAAC	TTTCAACAAA
51	AGCAAAATCC	CATACAGAAA	ATTCATTAC	TAACGTCTGG	AAAGACGACA
	TCGTTTTAGG	GTATGTCTTT	TAAGTAAATG	ATTGCAGACC	TTTCTGCTGT
101	AAACTTTAGA	TCGTTACGCT	AACTATGAGG	GCTGTCTGTG	GAATGCTACA
	TTTGAAATCT	AGCAATGCCA	TTGATACTCC	CGACAGACAC	CTTACGATGT
151	GGCGTTGTAG	TTTGTA CTGG	TGACGAAACT	CAGTGTTACG	GTACATGGGT
	CCGCAACATC	AAACATGACC	ACTGCTTTGA	GTCACAATGC	CATGTACCCA
201	TCCTATTGGG	CTTGCTATCC	CTGAAAATGA	GGGTGGTGGC	TCTGAGGGTG
	AGGATAACCC	GAACGATAGG	GACTTTTACT	CCCACCAACG	AGACTCCCAC
251	GCGGTTCTGA	GGGTGGCGGT	TCTGAGGGTG	GCGGTACTAA	ACCTCCTGAG
	CGCCAAGACT	CCCACCGCCA	AGACTCCCAC	CGCCATGATT	TGGAGGACTC
301	TACGGTGATA	CACCTATTCC	GGGCTATACT	TATATCAACC	CTCTCGACGG
	ATGCCACTAT	GTGGATAAGG	CCCGATATGA	ATATAGTTGG	GAGAGCTGCC

FIG. 350

APPROVED	C.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

351 CACTTATCCG CCTGGTACTG AGCAAAACCC CGCTAATCCT AATCCTTCTC
GTGAATAGGC GGACCATGAC TCGTTTTGGG GCGATTAGGA TTAGGAAGAG

401 TTGAGGAGTC TCAGCCTCTT AATACTTTCA TGTTTCAGAA TAATAGGTTC
AACTCCTCAG AGTCGGAGAA TTATGAAAGT ACAAAGTCTT ATTATCCAAG

451 CGAAATAGGC AGGGGGCATT AACTGTTTAT ACGGGCACTG TTACTCAAGG
GCCTTATCCG TCCCCCGTAA TTGACAAATA TGCCCCGTGAC AATGAGTTCC

501 CACTGACCCC GTTAAACTT ATTACCAGTA CACTCCTGTA TCATCAAAAG
GTGACTGGGG CAATTTTGAA TAATGGTCAT GTGAGGACAT AGTAGTTTTC

551 CCATGTATGA CGCTTACTGG AACGGTAAAT TCAGAGACTG CGCTTTCCAT
GGTACATACT GCGAATGACC TTGCCATTAA AGTCTCTGAC GCGAAAGGTA

601 TCTGGCCTTA ATGAGGATTT ATTTGTTTGT GAATATCAAG GCCAATCGTC
AGACCGAAAT TACTCCTAAA TAAACAAACA CTTATAGTTC CGGTTAGCAG

651 TGACCTGCCT CAACCTCCTG TCAATGCTGG CCGCGGCTCT GGTGGTGGTT
ACTGGACGGA GTTGAGGAC AGTTACGACC GCCGCCGAGA CCACCACCAA

701 CTGGTGCGCG CTCTGAGGGT GGTGGCTCTG AGGGTGGCGG TTCTGAGGGT
GACCACCGCC GAGACTCCCA CCACCGAGAC TCCCACCGCC AAGACTCCCA

FIG. 35P

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

```

751  GCGGGCTCTG AGGAGGGCGG TTCCGGTGGT GGCTCTGGTT CCGGTGATTT
      CCGCCGAGAC TCCCTCCGCC AAGGCCACCA CCGAGACCAA GGCCACTAAA

801  TGATTATGAA AAGATGGCAA ACGCTAATAA GGGGGCTATG ACCGAAAATG
      ACTAATACTT TTCCTACCGTT TCGGATTATT CCCCCGATAC TGGCTTTTAC

851  CCGATGAAAA CGCGCTACAG TCTGACGCTA AAGGCAAACT TGATTCTGTC
      GGCTACTTTT CGCGGATGTC AGACTGCCAT TTCCGTTTGA ACTAAGACAG

901  GCTACTGATT ACGGTGCTGC TATCGATGGT TTCATTGGTG ACGTTTCCGG
      CGATGACTAA TGCCACGACG ATAGCTACCA AAGTAACCCAC TGCAAAGGCC

951  CCTTGCTAAT GGTAATGGTG CTA CTGCTGGC TTTTGCTGGC TCTAATTCCC
      GGAACGATTA CCATTACCAC GATGACCACG AAAACGACCG AGATTAAAGG

                                     XmnI
                                     ~~~~~~

1001 AAATGGCTCA AGTCGGTGAA GTGATAATT CACCTTTAAT GAATAATTTC
      TTTACCGAGT TCAGCCACTT CCACTATTAA GTGGAATTA CTTATTAAAG

1051 CGTCAATATT TACCTTCCAT CCCTCAATCG GTTGAATGTC GCCCTTTTGT
      GCAGTTATAA ATGGAAGGTA GGGAGTTAGC CAACTTACAG CGGGAACAACA
  
```

FIG. 35Q

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

1101 CTTTGGCGCT GGTAAACCCCT ATGAATTTTC TATTGATTGT GACAAAATAA
 GAAACCCGCGA CCATTGCGA TACTTAAAG ATAACATAACA CTGTTTTATT

1151 ACTTATTCCG TGGTGTCCTT GCGTTCTTT TATATGTTGC CACCTTTATG
 TGAATAAGGC ACCACAGAAA CGCAAAGAAA ATATACAACG GTGGAAATAC

1201 TATGTATTTT CTACGTTTGC TAACATACTG CGTAATAAGG AGTCTTGATA
 ATACATAAAA GATGCAAACG ATTGTATGAC GCATTATTCC TCAGAACTAT

HindIII

HindI
 ~~~  
 1251 AGCTT  
 TCGAA

FIG. 35R



|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| GRAFTSHAH |           |          |



M7-II (ss-TAG)

502 bp

**FIG. 35S**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

M 7-II (ss-TAG) :

ECORI

~~~~~

1	CGGGAATTCCG	GAGGCGGTTC	CGGTGGTGGC	TCTGGTTCCG	GTGATTTTGA
	GCCCTTAAGC	CTCCGCCAAG	GCCACCACCG	AGACCAAGGC	CACTAAAACT
51	TTATGAAAAG	ATGGCAAACG	CTAATAAGGG	GGCTATGACC	GAAAATGCCG
	AATACTTTTC	TACCGTTTGC	GATTATTCCC	CCGATACTGG	CTTTTACGGC
101	ATGAAAACGC	GCTACAGTCT	GACGCTAAAG	GCAAACCTGA	TTCTGTCGCT
	TACTTTTGCG	CGATGTCAGA	CTGCGATTTC	CGTTTGAAC	AAGACAGCGA
151	ACTGATTACG	GTGCTGCTAT	CGATGGTTTC	ATTGGTGACG	TTTCCGGCCT
	TGACTAATGC	CACGACGATA	GCTACCAAAG	TAACCACTGC	AAAGGCCGGA
201	TGCTAATGGT	AATGGTGCTA	CTGGTGATTT	TGCTGGCTCT	AATCCCCAAA
	ACGATTACCA	TTACCACGAT	GACCACTAAA	ACGACCGAGA	TTAAGGGTTT
251	TGGCTCAAGT	CGGTGACGGT	GATAATTCAC	CTTTAATGAA	TAAATTCGCT
	ACCGAGTTCA	GCCACTGCCA	CTATTAAGTG	GAAATTACTT	ATTAAAGGCA

XmnI

FIG. 35T

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

```

301  CAATATTAC  CTTCCCTCCC  TCAATCGGTT  GAATGTCGCC  CTTTGTCTT
      GTTATAAATG  GAAGGAGGG  AGTTAGCCAA  CTTACAGCGG  GAAACAGAA

351  TGGCGCTGGT  AAACCATATG  AATTTTCTAT  TGATTGTGAC  AAAATAAACT
      ACCGCGACCA  TTTGGTATAC  TTAAAGATA  ACTAACACTG  TTTTATTGA

401  TATTCCGTGG  TGTCTTTGCG  TTTCTTTTAT  ATGTTGCCAC  CTTTATGTAT
      ATAAGGCACC  ACAGAAACGC  AAAGAAAATA  TACAACGGTG  GAAATACATA

      HindIII
      ~~~~

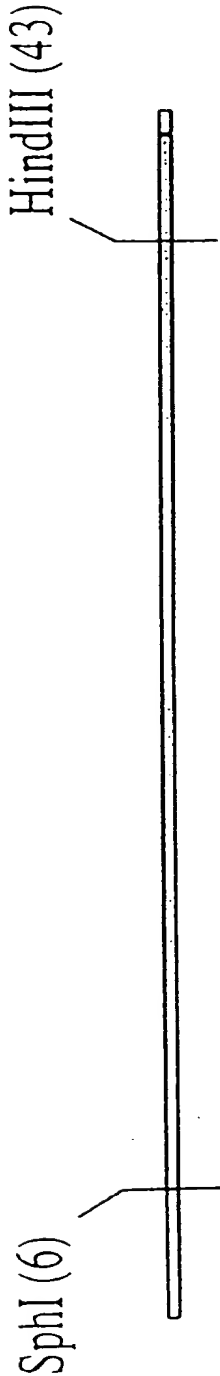
451  GTATTTTCTA  CGTTTGCTAA  CATACTGCGT  AATAAGGAGT  CTTGATAAGC
      CATAAAAGAT  GCAAACGATT  GTATGACGCA  TTATTCCTCA  GAACTATTCC
  
```

```

501  Hi
      ~
      TT
      AA
  
```

FIG. 35U

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		



M8
47 bp
FIG. 35V

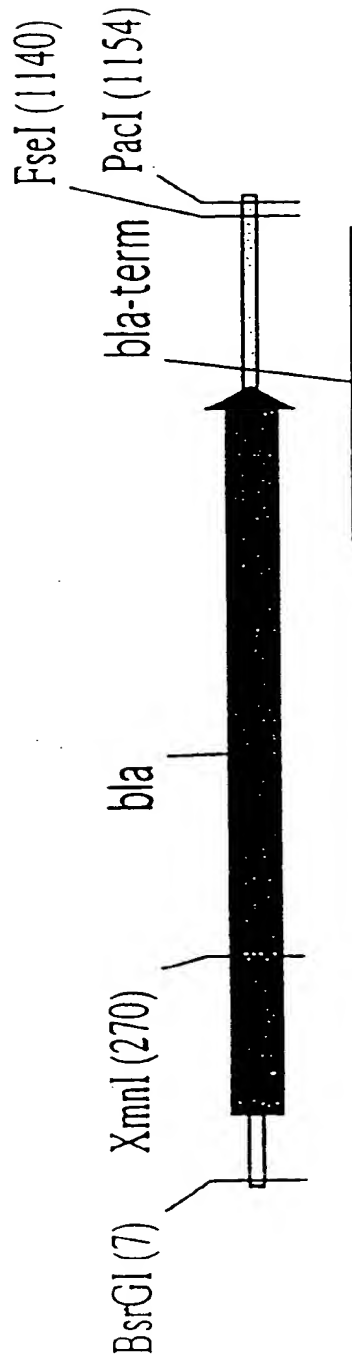
APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

M 8:

	sphI	HindIII
	-----	-----
1	GCATGCCATA ACTTCGTATA ATGTACGCTA TACGAAGTTA TAAGCTT	
	CGTACGGTAT TGAAGCATAT TACATGCGAT ATGCTTCAAT ATTCGAA	

FIG. 35W

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		



M10-II

1163 bp

FIG. 35X

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

M 10-II:

BsrGI

1	GGGGGTGTAC	ATTCAAATAT	GTATCCGCTC	ATGAGACAAT	AACCTGATA
	CCCCCACATG	TAAGTTTATA	CATAGGCGAG	TACTCTGTTA	TTGGGACTAT
51	AATGCTTCAA	TAATATTGAA	AAAGGAAGAG	TATGAGTATT	CAACATTGCC
	TTACGAAGTT	ATTATAACTT	TTTCCTTCTC	ATACTCATAA	GTTGTAAGG
101	GTGTCGCCCT	TATCCCCTTT	TTTGCGGCAT	TTTGCCCTCC	TGTTTTTGCT
	CACAGCGGGA	ATAAGGAAA	AAACGCCGTA	AAACGGAAGG	ACAAAACGA
151	CACCCAGAAA	CGCTGGTGAA	AGTAAAAGAT	GCTGAGGATC	AGTTGGGTGC
	GTGGGTCTTT	GCGACCACTT	TCATTTTCTA	CGACTCCTAG	TCAACCCACG
201	GCGAGTGGGT	TACATCGAAC	TGGATCTCAA	CAGCGGTAAG	ATCCTTGAGA
	CGCTCACCCA	ATGTAGCTTG	ACCTAGAGTT	GTCGCCATTC	TAGGAACTCT
251	GTTTTCGCCC	CGAAGAACGT	TTTCCAATGA	TGAGCACTTT	TAAAGTTCTG
	CAAAAGCGGG	GCTTCTTGCA	AAAGGTTACT	ACTCGTGAAA	ATTCAAGAC

XmnI

FIG. 35Y

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

301	CTATGTGGCG	CGGTATTATC	CCGTATTGAC	GCCGGGCAAG	AGCAACTCGG
	GATACACCGC	GCCATAATAG	GGCATAACTG	CGGCCCGTTC	TCGTTGAGCC
351	TCGCCGCATA	CACATTCTC	AGAATGACTT	GGTTGAGTAC	TCACCAGTCA
	AGCGGCGTAT	GTGATAAGAG	TCTTACTGAA	CCAATCATG	AGTGGTCAGT
401	CAGAAAAGCA	TCTTACGGAT	GGCATGACAG	TAAGAGAATT	ATGCAGTGCT
	GTCTTTTCGT	AGAATGCCCTA	CCGTACTGTC	ATTCTCTTAA	TACGTCACGA
451	GCCATAACCA	TGAGTGATAA	CACTGCGGCC	AACTTACTTC	TGACAACGAT
	CGGTATTGGT	ACTCACTATT	GTGACGCCCG	TTGAATGAAG	ACTGTTGCTA
501	CGGAGGACCG	AAGGAGCTAA	CCGCTTTTTT	GCACAACATG	GGGGATCATG
	GCCTCCTGGC	TTCCCTCGATT	GGCGAAAAAA	CGTGTGTAC	CCCCTAGTAC
551	TAACTCGCCT	TGATCGTTGG	GAACCGGAGC	TGAATGAAGC	CATACCAAAC
	ATTGAGCGGA	ACTAGCAACC	CTTGGCCTCG	ACTTACTTCG	GTATGGTTTG
601	GACGAGCGTG	ACACCACGAT	GCCTGTAGCA	ATGGCAACAA	CGTTGCGCAA
	CTGCTCGCAC	TGTGGTGCTA	CGGACATCGT	TACCGTTGTT	GCAACGCGTT
651	ACTATTAACT	GGCGAACTAC	TTACTCTAGC	TTCCCCGGCAA	CAGTTAATAG
	TGATAATTGA	CCGCTTGATG	AATGAGATCG	AAGGGCCGTT	GTCAATTATC

FIG. 35Z

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

701 ACTGGATGGA GCGGGATAAA GTTGCAGGAC CACTTCTGCG CTCGGCCCTT
TGACCTACCT CCGCCTATTT CAACGTCCTG GTGAAGACGC GAGCCGGGAA

751 CCGGCTGGCT GGTTTATTGC TGATAAATCT GGAGCCGGTG AGCGTGGGTC
GGCCGACCGA CCAATAACG ACTATTTAGA CCTCGGCCAC TCGCACCCAG

801 TCGCGGTATC ATTGCAGCAC TGGGGCCAGA TGGTAAGCCC TCCCGTATCG
AGCGCCATAG TAACGTCGTG ACCCCGGTCT ACCATTCCGG AGGGCATAGC

851 TAGTTATCTA CACGACGGGG AGTCAGGCAA CTATGGATGA ACGAAATAGA
ATCAATAGAT GTGCTGCCCC TCAGTCCGTT GATACCTACT TGCTTTATCT

901 CAGATCGCTG AGATAGGTGC CTCACTGATT AAGCATTGGG TAACTGTCAG
GTCTAGCGAC TCTATCCACG GAGTGACTAA TTCGTAACCC ATTGACAGTC

951 ACCAAGTTTA CTCATATATA CTTTAGATTG ATTTAAAACT TCATTTTTAA
TGGTTCAAAT GAGTATATAT GAAATCTAAC TAAATTTTGA AGTAAAAATT

1001 TTTAAAAGGA TCTAGGTGAA GATCCCTTTT GATAATCTCA TGACCAAAT
AAATTTTCCT AGATCCACTT CTAGGAAAAA CTATTAGAGT ACTGGTTTAA

1051 CCCTTAACGT GAGTTTTCGT TCCACTGAGC GTCAGACCCC GTAGAAAAGA
GGGAATTGCA CTCAAAAGCA AGTGACTCG CAGTCTGGGG CATCTTTTCT

FIG. 35AA

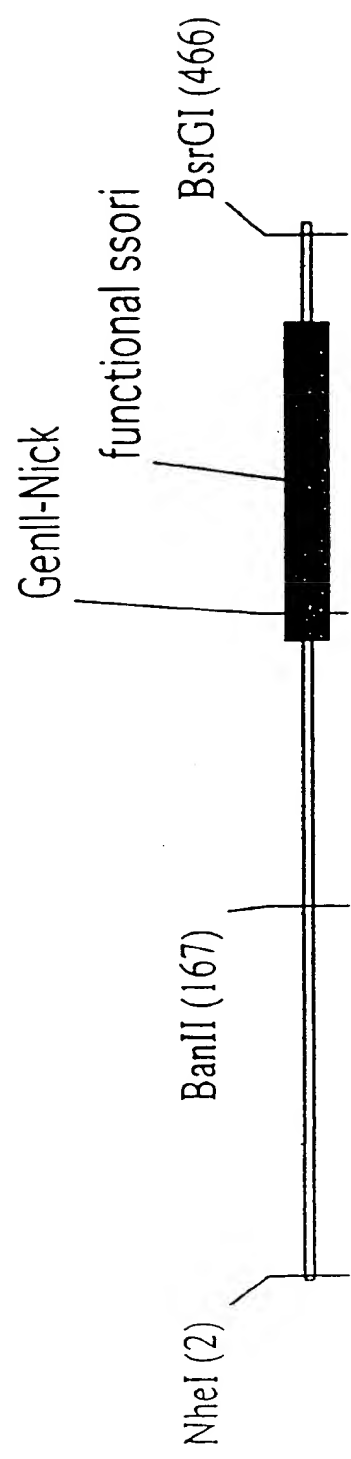
APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

		FseI	PacI
1101	TCAAAGGATC	TTCTTGAGAT	CCTTTTGGAT
	AGTTTCCTAG	AAGAACTCTA	GGAAACTA
		TTACCGGCCG	GGGGGGGAA

1151	AAATTAAGGG	GGG
	TTAATTCCCC	CCC

FIG. 35BB

APPROVED	O.G. FIG.
BY	CLASS
CRAFTSMAN	SUBCLASS



M11-II

470 bp

FIG. 35CC

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

M11-II:

NheI

1 GCTAGCACGC GCCCTGTAGC GCGCATTA GCGCGCGGG TGTGGTGGTT
 CGATCGTGCG CCGACATCG CCGGTAATT CCGCGCGCC ACACCACCAA

51 ACGCGCAGCG TGACCGCTAC ACTTGCCAGC GCCTAGCGC CCGCTCCTTT
 TCGCGGTCGC ACTGGCGATG TGAACGGTCG CCGGATCGCG GCGAGGAAA

101 CGCTTTCTTC CCTTCCCTTC TCGCCACGTT CGCCGGCTTT CCCCCTCAAG
 GCGAAAGAAG GGAAGGAAAG AGCGGTGCAA CCGGCCGAAA GGGCAGTTC

BanII

~~~~~

151 CTCTAAATCG GGGCTCCCT TTAGGGTTCC GATTAGTGC TTTACGGCAC  
 GAGATTTAGC CCCCAGGGA AATCCCAAGG CTAAATCAGG AAATGCCGTG

201 CTCGACCCCA AAAAATTGA TTAGGGTGAT GGTCTCGTA GTGGGCCATC  
 GAGCTGGGGT TTTTGTGAAT AATCCCACTA CCAAGAGCAT CACCCGGTAG

251 GCCCTGATAG ACGGTTTTC GCCCTTTGAC GTTGAGTCC ACGTCTTTA  
 CCGGACTATC TGCCAAAAG CCGGAAACTG CAACCTCAGG TGCAAGAAAT

FIG. 35DD

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

```
301  ATAGTGGACT CTTGTTCCAA ACTGGAACAA CACTCAACCC TATCTCGGTC
    TATCACCTGA GAACAAGTT TGACCTTGTT GTGAGTTGGG ATAGAGCCAG

351  TATTCCTTTG ATTTATAAGG GATTTTGCCG ATTCGGCCT ATTGGTTAAA
    ATAAGAAAAC TAAATATTCC CTAAACGGC TAAAGCCGA TAACCAATTT

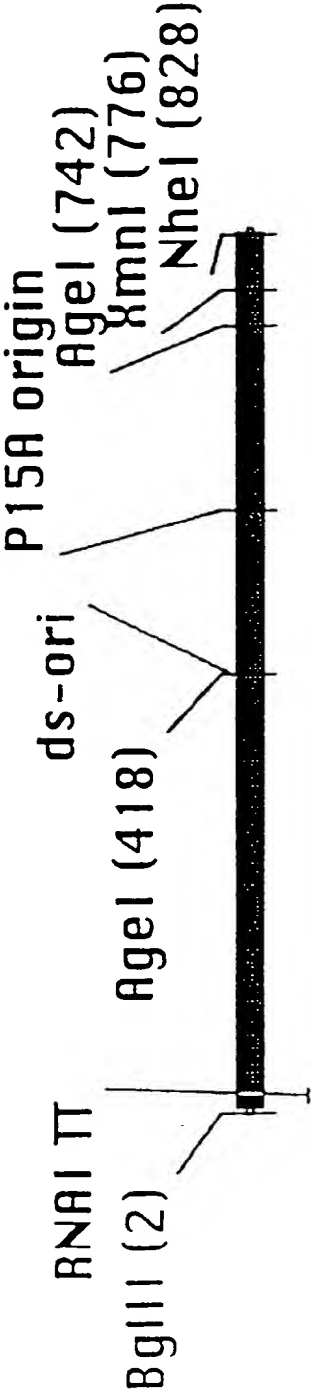
401  AAATGAGCTG ATTTAACAAA AATTTAACG GAATTTTAAC AAAATATTAA
    TTACTCGAC TAAATTGTTT TTAAATTGCG CTTAAAAATTG TTTTATAATT

          BsrGI
          ~~~~~

451 CGTTTACAAT TTCATGTACA
 GCAAATGTTA AAGTACATGT
```

FIG. 35EE

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |



M12  
832 bp

**FIG. 35FF**

M 12:

BglII

~~~~~

1	AGATCTAATA	AGATGATCTT	CTTGAGATCG	TTTTGGTCTG	CGCGTAATCT
	TCTAGATTAT	TCTACTAGAA	GAACTCTAGC	AAAACCAGAC	GCGCATTAGA
51	CTTGCTCTGA	AAACGAAAAA	ACCGCCTTGC	AGGGCGGTTT	TTCGTAGGTT
	GAACGAGACT	TTTGCTTTTT	TGGCGAACG	TCCCGCCAAA	AAGCATCCAA
101	CTCTGAGCTA	CCAACTCTTT	GAACCGAGGT	AAC TGGCTTG	GAGAGCGCA
	GAGACTCGAT	GGTTGAGAAA	CTTGGCTCCA	TTGACCGAAC	CTCCTCGCGT
151	GTCACATAAA	CTTGTCCTTT	CAGTTTAGCC	TTAACC GGCG	CATGACTTCA
	CAGTGATTTT	GAACAGGAAA	GTCAAATCGG	AATTGGCCGC	GTACTGAAGT
201	AGACTAACTC	CTCTAAATCA	ATTACCAGTG	GCTGCTGCCA	GTGGTGCTTT
	TCTGATTGAG	GAGATTTAGT	TAATGGTCAC	CGACGACGGT	CACCACGAAA
251	TGCATGTCTT	TCCGGGTTGG	ACTCAAGACG	ATAGTTACCG	GATAAGGCGC
	ACGTACAGAA	AGGCCCCAAC	TGAGTTCTGC	TATCAATGGC	CTATTCCCGC
301	AGCGGTCGGA	CTGAACGGGG	GGTTCGTGCA	TACAGTCCAG	CTTGGAGCGA
	TCGCCAGCCT	GACTTGCCCC	CCAAGCACGT	ATGTCAGGTC	GAACCTCGCT

FIG. 35GG

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

```

351 ACTGCCCTACC CGGAACCTGAG TGTCAGGCGT GGAATGAGAC AAACGCGGCC
 TGACGGGATGG GCCTTGACTC ACAGTCCGCA CCTTACTCTG TTTGCGCGCGG

 AgeI
      ~~~~~
401  ATAACAGCGG AATGACACCG GTAAACCGAA AGGCAGGAAC AGGAGAGCGC
      TATTGTGCGC TTA CTGTGGC CATTGGCTT TCCGTCCCTG TCCTCTCGCG

451  AGGAGGGAGC CGCCAGGGG AAACGCCCTG TATCTTTATA GTCCCTGTCCG
      TCCTCCCTCG GCGTCCCCC TTTGCGGACC ATAGAAATAT CAGGACAGCC

501  GTTTCGCCAC CACTGATTG AGCGTCAGAT TTCGTGATGC TTGTCAGGGG
      CAAAGCGGTG GTGACTAAAC TCGCAGTCTA AAGCACTACG AACAGTCCCC

551  GCGGGAGCCT ATGGAAAAAC GGCTTTGCCG CGGCCCTCTC ACTTCCCCTGT
      CCGCCTCGGA TACCTTTTG CCGAAACGGC GCCGGGAGAG TGAAGGGACA

601  TAAGTATCTT CCTGGCATCT TCCAGGAAAT CTCCGCCCCG TTCGTAAGCC
      ATTCATAGAA GGACCGTAGA AGGTCTTTA GAGCGGGGC AAGCATTCGG

651  ATTTCCGCTC GCCGCAGTCG AACGACCGAG CGTAGCGAGT CAGTGAGCGA
      TAAAGGCGAG CCGCGTCAGC TTGCTGGCTC GCATCGCTCA GTCACCTCGCT
  
```

**FIG. 35HH**



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

701 GGAAGCGGAA TATATCCTGT ATCACATATT CTGCTGACGC ACCGGTGCAG  
 CCTTCGCCCTT ATATAGGACA TAGTGTATAA GACGACTGCG TGGCCACGTC

AgeI  
 ~~~~~

XmnI
 ~~~~~

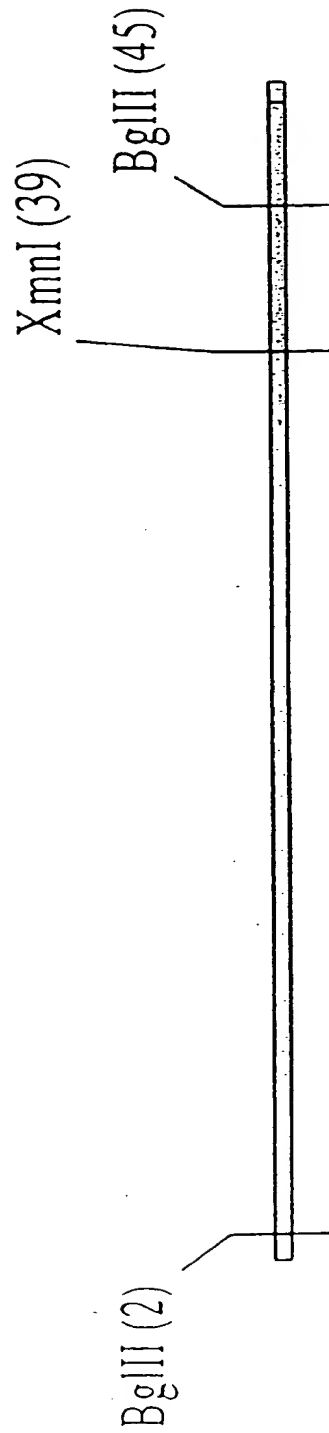
751 CCTTTTCTTCT CCTGCCACAT GAAGCACTTC ACTGACACCC TCATCAGTGC  
 GGAAAAAAGA GGACGGTGTA CTTCGTGAAG TGACTGTGGG AGTAGTCACG

NheI  
 ~~~~~

801 CAACATAGTA AGCCAGTATA CACTCCGCTA GC
 GTTGTATCAT TCGGTCATAT GTGAGGCGAT CG

FIG. 35//

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |



M13
49 bp

FIG. 35JJ

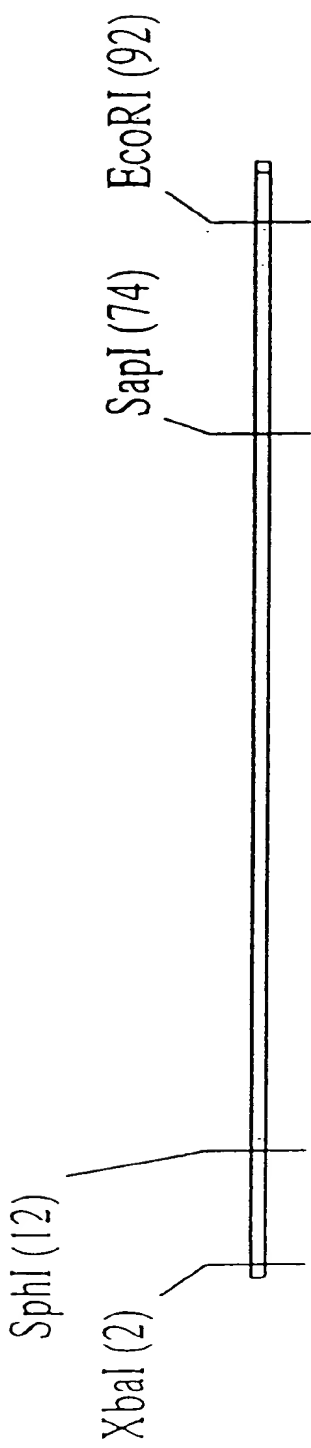
| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

M 13:

| | | | |
|---|---|-------|-------|
| | BglII | XmnI | BglII |
| | ----- | ----- | ----- |
| 1 | AGATCTCATA ACTTCGTATA ATGTATGCTA TACGAAGTTA TTCAGATCT | | |
| | TCTAGAGTAT TGAAGCATAT TACATACGAT ATGCTTCAAT AAGTCTAGA | | |

FIG. 35KK

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |



M19
96 bp
FIG. 35LL

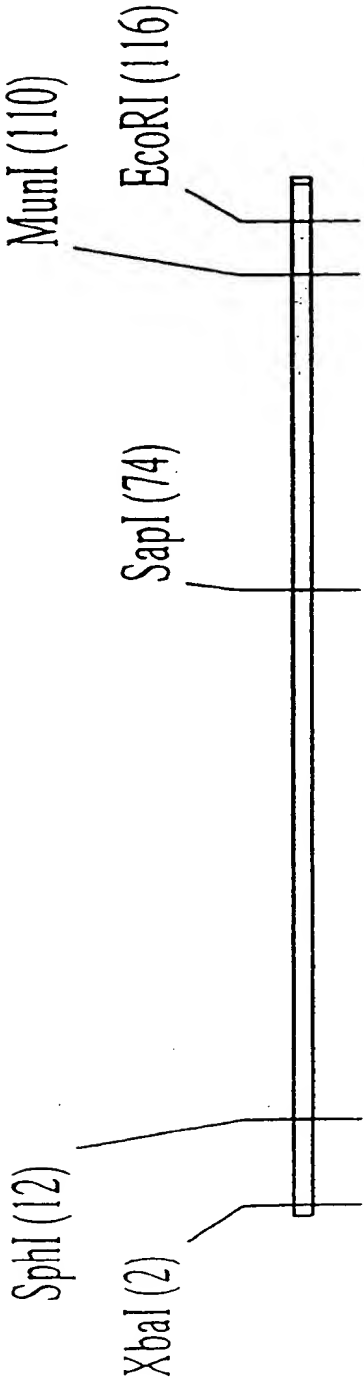
| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

M 19:

| | | | | | |
|----|------------|-------------|------------|------------|------------|
| | XbaI | SphI | | | |
| | ----- | ----- | | | |
| 1 | TCTAGAGCAT | CCGTAGGAGA | AAATAAATG | AAACAAAGCA | CTATTGCAC |
| | AGATCTCGTA | CGCATCCTCT | TTTATTTTAC | TTTGTTTCGT | GATAACGTGA |
| | | | | | |
| | | SapI | | ECORI | |
| | | ----- | | ----- | |
| 51 | GGCACTCTTA | CCGTTGCTCT | TCACCCCTGT | TACCAAAGCC | GAATTC |
| | CCGTGAGAA | TGGCAACGAGA | AGTGGGGACA | ATGGTTTCGG | CTTAAG |

FIG. 35MM

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |



M20
120 bp

FIG. 35NN

| | | |
|-----------|----------|----------|
| APPROVED | D.G.FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

M 20:

XbaI SphI

1 TCTAGAGCAT GCGTAGGAGA AAATAAATG AAACAAAGCA CTATTGCACT
 AGATCTCGTA CGCATCCTCT TTTATTTTAC TTTGTTTCGT GATAACGTGA

SapI

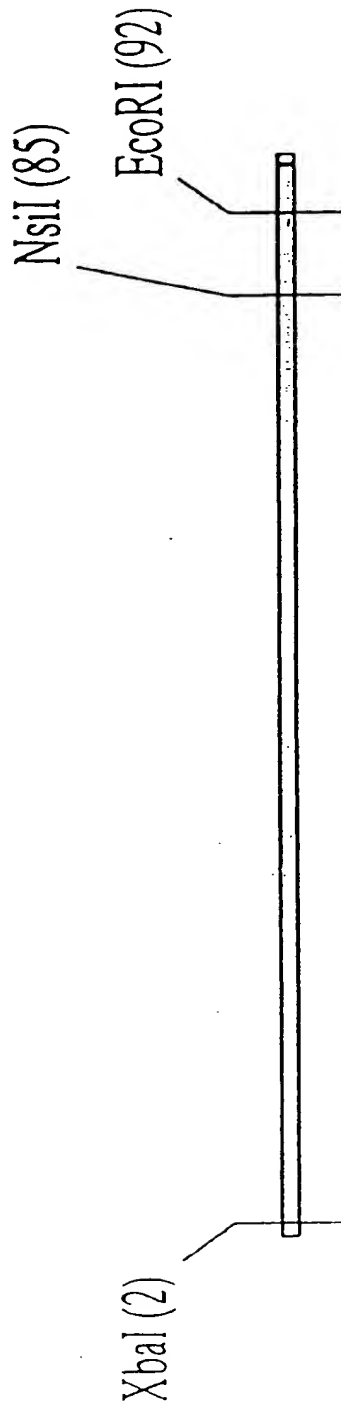
51 GGCACCTCTTA CCGTTGCTCT TCACCCCTGT TACCAAGCC GACTACAAAG
 CCGTGAGAAAT GGCAACGAGA AGTGGGGACA ATGGTTTCGG CTGATGTTTC

MunI EcoRI

101 ATGAAGTGCA ATTGGAATTC
 TACTTCACGT TAACCTTAAG

FIG. 3500

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |



M21
96 bp

FIG. 35PP

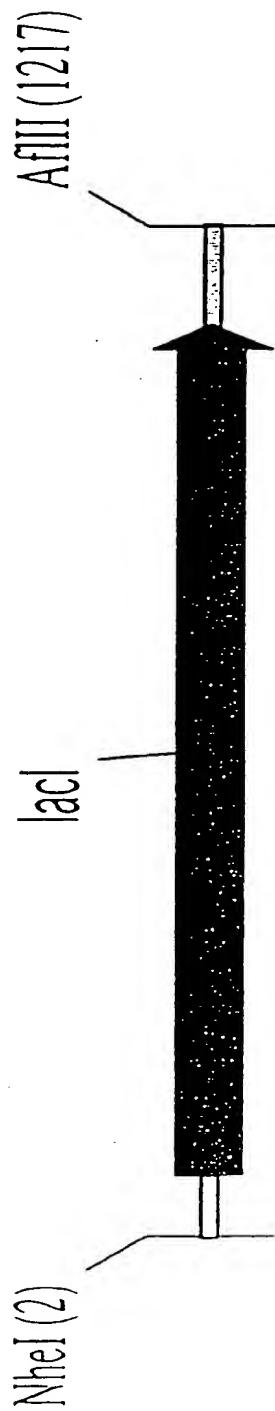
| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

M 21:

| | | | |
|----|------------|------------|-------------|
| | XbaI | | |
| | ----- | | |
| 1 | TCTAGAGGTT | GAGGTGATTT | TATGAAAAAG |
| | AGATCTCCAA | CTCCACTAAA | ATACTTTTTC |
| | | | AAATATCGCAT |
| | | | TTATAGCGTA |
| | | | AAGAAGAACG |
| | | | TTCTTCTTGC |
| 51 | ATCTATGTTC | GTTTTTTCTA | TTGCTACAAA |
| | TAGATACAAG | CAAAAAGAT | AACGATGTTT |
| | | | ACGTATGCCA |
| | | | CTTAAG |
| | | NsiI | ECORI |
| | | ----- | ----- |

FIG. 35QQ

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| CRAFTSMAN | | |



M41

1221 bp

FIG. 35RR

| | |
|-----------|-----------|
| APPROVED | O.G. FIG. |
| BY | CLASS |
| GRAFTSHAH | SUBCLASS |

M 41:

NheI

```

-----
1  GCTAGCATCG AATGGCGCAA AACCTTTCGC GGTATGGCAT GATAGCGCCC
   CGATCGTAGC TTACCGCGTT TTGGAAGCG CCATACCGTA CTATCGCGGG

51  GGAAGAGAGT CAATTCAGGG TGGTGAATGT GAAACCAGTA ACGTTATACG
   CCTTCCTCTCA GTTAAGTCCC ACCACTTACA CTTTGGTCAT TGCAATATGC

101 ATGTCGCAGA GTATGCCGGT GTCTCTTATC AGACCGTTTC CCGCGTGGTG
   TACAGCGTCT CATACGGCCA CAGAGAATAG TCTGGCAAAG GCGCACCCAC

151 AACCAGGCCA GCCACGTTC TCGGAAACG CGGAAACG TGAAGCGCG
   TTGGTCCGGT CCGTGCAAAG ACGCTTTTGC GCCCTTTTC ACCTTCGCCG

201 GATGGCGGAG CTGAATTACA TTCCTAACCG CGTGGCACAA CAACTGGCGG
   CTACCGCCTC GACTTAATGT AAGGATTGGC GCACCGTGTT GTTGACCGCC

251 GCAAACAGTC GTTGCTGATT GGCGTTGCCA CCTCCAGTCT GGCCCTGCAC
   CGTTTGTCAG CAACGACTAA CCGCAACGGT GGAGGTCAGA CCGGGACGTG

301 GCGCCGTCGC AAATTGTGC GCGGATTAA TCTCGCGCCG ATCAACTGGG
   CGCGGCAGCG TTTAACAGCG CCGCTAATT AGAGCGCGG TAGTTGACCC
  
```

FIG. 35SS

| | |
|-----------|-----------|
| APPROVED | O.G. FIG. |
| BY | CLASS |
| DRAFTSMAN | SUBCLASS |

| | | | | | |
|-----|-------------|------------|------------|------------|-------------|
| 351 | TGCCAGCGTG | GTCGTGTCGA | TGGTAGAAGG | AAGCGGCGTC | GAAGCCTGTA |
| | ACGGTCGCAC | CAGCACAGCT | ACCATCTTGC | TTCGCCGCAG | CTTCGGACAT |
| 401 | AAGCGGCGGT | GCACAACTCT | CTCGCGCAAC | GTGTCAGTGG | GCTGATTATT |
| | TTCGCCGCCA | CGTGTTAGAA | GAGCGCGTTG | CACAGTCACC | CGACTAATAA |
| 451 | AACTATCCGC | TGGATGACCA | GGATGCTATT | GCTGTGGAAG | CTGCCCTGCAC |
| | TTGATAGCGG | ACCTACTGGT | CCTACGATAA | CGACACCTTC | GACGGACGTG |
| 501 | TAATGTTCCG | GCGTTATTTC | TTGATGTCTC | TGACCAGACA | CCCATCAACA |
| | ATTACAAGGC | CGCAATAAAG | AACTACAGAG | ACTGGTCTGT | GGTAGTTGT |
| 551 | GTATTATTTT | CTCCCATGAG | GACGGTACGC | GACTGGGCGT | GGAGCATCTG |
| | CATAATAAAA | GAGGTACTC | CTGCCATGCG | CTGACCCGCA | CCTCGTAGAC |
| 601 | GTCGCATTGG | GCCACCAGCA | AATCGCGCTG | TTAGCTGGCC | CATTAAGTTC |
| | CAGCGTAACC | CGGTGGTCGT | TTAGCGCGAC | AATCGACCGG | GTAATTCAAG |
| 651 | TGTCTCGGCG | CGTCTGCGTC | TGGCTGGCTG | GCATAAATAT | CTCACTCGCA |
| | ACAGAGCCCG | GCAGACGCAG | ACCGACCGAC | CGTATTTATA | GAGTGAGCGT |
| 701 | ATCAAATTCA | GCCGATAGCG | GAACGGGAAG | GCGACTGGAG | TGCCATGTCC |
| | TAGTTTAAAGT | CGGCTATCGC | CTTGCCCTTC | CGCTGACCTC | ACGGTACAGG |

FIG. 35TT

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

| | | | | | |
|------|-------------|-------------|-------------|-------------|-------------|
| 751 | GGTTTTCAAC | AAACCATGCA | AATGCTGAAT | GAGGGCATCG | TTCCCCACTGC |
| | CCAAAAGTTG | TTTGGTACGT | TTACGACTTA | CTCCCCGTAGC | AAGGGTGACG |
| 801 | GATGCTGGTT | GCCAACGATC | AGATGGCGCT | GGCGGCAATG | CGTGCCATTA |
| | CTACGACCAA | CGGTGCTAG | TCTACCGCGA | CCCGCGTTAC | GCACGGTAAT |
| 851 | CCGAGTCCGG | GCTGCGCGTT | GGTGCGGACA | TCTCGGTAGT | GGGATACGAC |
| | GGCTCAGGCC | CGACGCGCAA | CCACGCCCTGT | AGAGCCATCA | CCCTATGCTG |
| 901 | GATACCGAGG | ACAGCTCATG | TTATATCCCG | CCGCTGACCA | CCATCAAACA |
| | CTATGGCTCC | TGTCGAGTAC | AATATAGGCG | GGCGACTGGT | GGTAGTTTGT |
| 951 | GGATTTTCGC | CTGCTGGGGC | AAACCAGCGT | GGACCGCTTG | CTGCAACTCT |
| | CCTAAAAGCG | GACGACCCCG | TTTGCTCGCA | CCTGGCGAAC | GACGTTGAGA |
| 1001 | CTCAGGGCCA | GGCGGTGAAG | GGCAATCAGC | TGTTGCCCCGT | CTCACTGGTG |
| | GAGTCCCGGT | CCGCCACTTC | CCGTAGTCG | ACAACGGGCA | GAGTGACCAC |
| 1051 | AAAAGAAAAA | CCACCCCTGGC | TCCCAATACG | CAAACCGCCT | CTCCCCGCGC |
| | TTTTCTTTT | GGTGGGACCG | AGGGTTATGC | GTTTGGCGGA | GAGGGGCGCG |
| 1101 | GTTGGCCGAT | TCACTGATGC | AGCTGGCAGC | ACAGGTTTCC | CGACTGGAAA |
| | CAACCCGGCTA | AGTGACTACG | TCGACCGTGC | TGTCCAAAGG | GCTGACCTTT |

FIG. 35UU

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

1151 GCGGGCAGTG AGGCTACCCG ATAAAAGCGG CTTCCGTGACA GGAGGCCGTT
CGCCCCGTCAC TCCGATGGGC TATTTTCGCC GAAGGACTGT CCTCCGGCAA

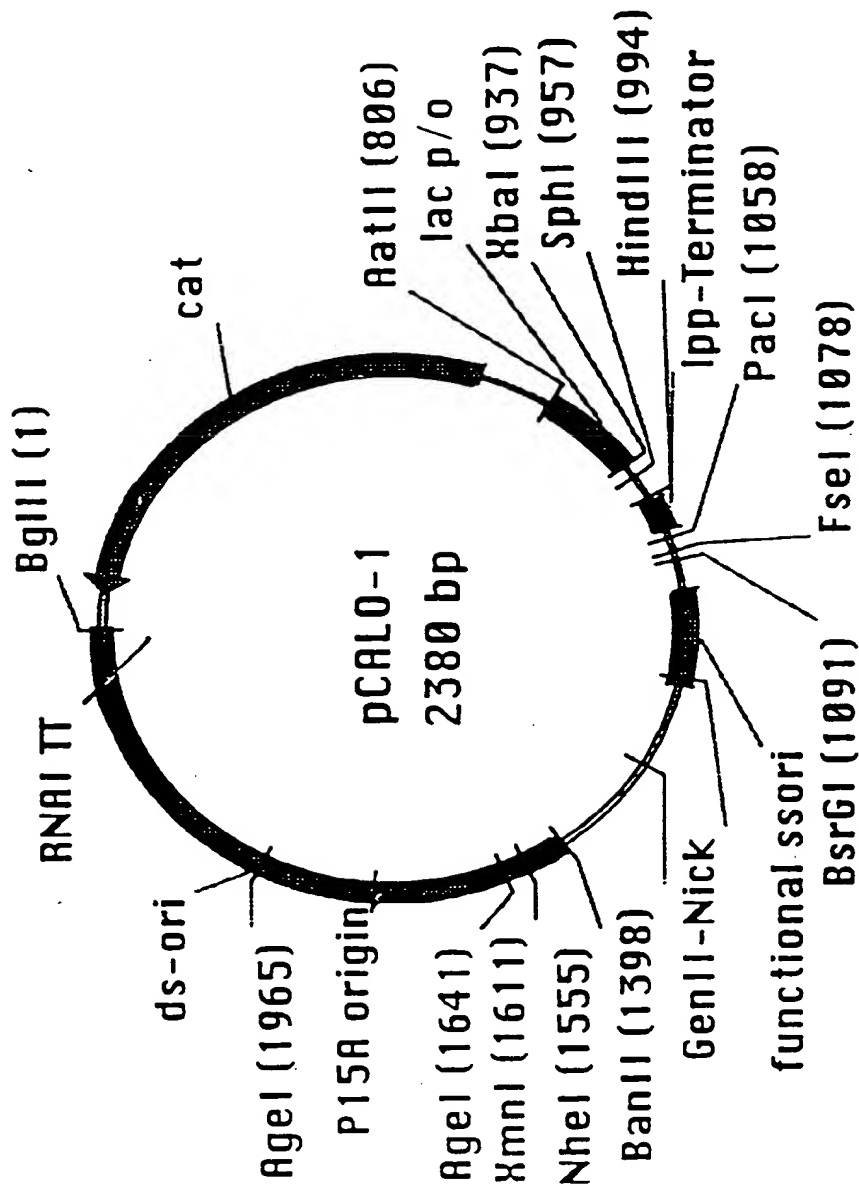
AflII

~~~~~

1201 TTGTTTGGCA GCCCACTTAA G  
AACAAAACGT CGGGTGAATT C

**FIG. 35V**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		



**FIG. 35WW**

pCALO-1:

BglII

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| | | | | | |
|-----|------------|-------------|------------|-------------|-------------|
| 1 | GATCTAGCAC | CAGGCGTTTA | AGGGACCCAA | TAACTGCCCTT | AAAAAATTA |
| | CTAGATCGTG | GTCCGCAAAAT | TCCCGTGGTT | ATTGACGGAA | TTTTTTTAAAT |
| 51 | CGCCCCGGCC | TGCCACTCAT | CGCAGTACTG | TTGTAATTCA | TTAAGCATTC |
| | GCGGGGCGGG | ACGGTGAGTA | GCGTCATGAC | AACATTAAAGT | AATTCGTAAG |
| 101 | TGCCGACATG | GAAGCCATCA | CAAACGGCAT | GATGAACCTG | AATCGCCAGC |
| | ACGGCTGTAC | CTTCGGTAGT | GTTTGCCGTA | CTACTTGGAC | TTAGCGGTCG |
| 151 | GGCATCAGCA | CCTTGTCGCC | TTGCGTATAA | TATTTGCCCA | TAGTGAAAAC |
| | CCGTAGTCGT | GGAACAGCGG | AACGCATATT | ATAAACGGGT | ATCACTTTTG |
| 201 | GGGGGCGAAG | AAGTTGTCCA | TATTGGCTAC | GTTTAAATCA | AAACTGGTGA |
| | CCCCCGCTTC | TTCAACAGGT | ATAACCGATG | CAAATTTAGT | TTTGACCCACT |
| 251 | AACTCACCCA | GGGATTGGCT | GAGACGAAA | ACATATTCTC | AATAAACCCCT |
| | TTGAGTGGGT | CCCTAACCGA | CTCTGCTTTT | TGTATAAGAG | TTATTTGGGA |
| 301 | TTAGGGAAAT | AGGCCAGGTT | TTCACCGTAA | CACGCCACAT | CTTGCGAATA |
| | AATCCCTTTA | TCCGGTCCAA | AAGTGGCATT | GTGCGGTGTA | GAACGCTTAT |

FIG. 35XX

| | | |
|-----------|-----------|----------|
| APPROVED | 0.6. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

| | |
|-----------|-----------|
| APPROVED | O.G. FIG. |
| BY | CLASS |
| DRAFTSMAN | SUBCLASS |

| | |
|-----|---|
| 351 | TATGTGTAGA AACTGCCGGA AATCGTCGTG GTATTCATC CAGAGCGATG
ATACACATCT TTGACGGCCT TTAGCAGCAC CATAAGTGAG GTCTCGCTAC |
| 401 | AAAACGTTTC AGTTTGCTCA TGGAAAACGG TGTAACAAGG GTGAACACTA
TTTTGCAAAG TCAAACGAGT ACCTTTGGCC ACATTGTTCC CACTTGTGAT |
| 451 | TCCCATATCA CCAGCTCACC GTCTTTCATT GCCATACGGA ACTCCGGGTG
AGGTATAGT GGTGAGTGG CAGAAAGTAA CGGTATGCCT TGAGGCCCCAC |
| 501 | AGCATTCATC AGCGGGGCAA GAATGTGAAT AAAGGCCGGA TAAAAC TTGT
TCGTAAGTAG TCCGCCCGTT CTACACTTA TTTCCGGCCT ATTTTGAACA |
| 551 | GCTTATTTT CTTACGGTC TTTAAAAGG CCGTAATATC CAGCTGAACG
CGAATAAAAA GAAATGCCAG AAATTTTCC GCATTATAG GTCGACTTGC |
| 601 | GTCTGGTTAT AGGTACATTG AGCAACTGAC TGAAATGCCT CAAAATGTTT
CAGACCAATA TCCATGTAAC TCGTTGACTG ACTTTACGGA GTTTTACAAG |
| 651 | TTTACGATGC CATTGGGATA TATCAACGGT GGTATATCCA GTGATTTTTT
AAATGCTACG GTAAACCCTAT ATAGTTGCCA CCATATAGGT CACTAAAAAA |
| 701 | TCCTCCATTT AGCTTCCCTTA GCTCCTGAAA ATCTCGATAA CTCAAAAAAT
AGAGGTAAAA TCGAAGGAAT CGAGGACTTT TAGAGCTATT GAGTTTTTAA |

FIG. 35YY

| | |
|-----------|----------------|
| APPROVED | O.G. FIG. |
| BY | CLASS SUBCLASS |
| DRAFTSMAN | |

751 ACGCCCGGTA GTGATCTTAT TTCATTATGG TGAAAGTTGG AACCTCACCC
 TCGGGGCCAT CACTAGAATA AAGTAATACC ACTTCAACC TTGGAGTGGG

AatII
 ~~~~~

801 GACGTCTAAT GTGAGTTAGC TCACTCATTA GGCACCCCCAG GCTTTACACT  
 CTGCAGATTA CACTCAATCG AGTGAGTAAT CCGTGGGGTC CGAAATGTGA

851 TTATGCTTCC GGCTCGTATG TTGTGTGGAA TTGTGAGCGG ATAACAATTT  
 AATACGAAGG CCGAGCATAC AACACACCTT AACACTCGCC TATTGTTAA

XbaI  
 ~~~~~

901 CACACAGGAA ACAGCTATGA CCATGATTAC GAATTTCTAG ACCCCCCCCC
 GTGTGTCCTT TGTCGATACT GGTACTAATG CTTAAAGATC TGGGGGGGGG

SphI
 ~~~~~

951 CGCATGCCAT AACTTCGTAT AATGTACGCT ATACGAAGTT ATAAGCTTGA  
 GCGTACGGTA TTGAAGCATA TTACATGCGA TATGCTTCAA TATTCGAACT

HindIII  
 ~~~~~

1001 CCTGTGAAGT GAAAATGGC GCAGATTGTG CGACATTTTT TTTGTCTGCC
 GGACACTTCA CTTTTTACCG CGCTAACAC GCTGTAAAAA AACAGACGG

FIG. 35ZZ

| | | |
|-----------|-----------|----------|
| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

| | PacI | FseI | BsrGI |
|------|-----------------------|------------|------------------------|
| | ~~~~~ | ~~~~~ | ~~~~~ |
| 1051 | GTTTAATTAA AGGGGGGGG | GGCCGGCCT | GGGGGGGGT GTACATGAAA |
| | CAAAATTAATT TCCCCCCCC | CCCGCCGGA | CCCCCCCCCA CATGTACTTT |
| 1101 | TTGTAAACGT TAATATTTG | TTAAATTCG | CGTTAAATTT TTGTTAAATC |
| | AACATTTGCA ATTATAAAAC | AATTTAAGC | GCAATTTAAA AACAAATTTAG |
| 1151 | AGCTCATTTT TTAACCAATA | GGCCGAAATC | GGCAAAATCC CTTATAAATC |
| | TCGAGTAAAA AATTGGTTAT | CCGGCTTTAG | CCGTTTTAGG GAATATTTAG |
| 1201 | AAAAGAATAG ACCGAGATAG | GGTTGAGTGT | TGTTCCAGTT TGGACAAGA |
| | TTTTCTTATC TGGCTCTATC | CCAATCACA | ACAAGGTCAA ACCTTGTTCT |
| 1251 | GTCCACTATT AAAGAACGTG | GACTCCAACG | TCAAAGGGCG AAAAACCCTC |
| | CAGGTGATAA TTTCTTGAC | CTGAGGTTGC | AGTTTCCCGC TTTTGGCAG |
| 1301 | TATCAGGGCG ATGGCCCACT | ACGAGAACCA | TCACCCCTAAT CAAGTTTTTT |
| | ATAGTCCCGC TACCGGGTGA | TGCTCTTGGT | AGTGGGATTA GTTCAAAAAA |
| 1351 | GGGGTCGAGG TGCCGTAAAG | CACTAAATCG | GAACCCCTAAA GGGAGCCCC |
| | CCCCAGCTCC ACGGCATTTC | GTGATTTAGC | CTTGGGATTT CCTTCGGGGG |

BanII

~~~~~

FIG. 35AAA

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

1401	GATTAGAGC	TTGACGGGGA	AAGCCGGCGA	ACGTGGCGAG	AAAGGAAGGG
	CTAAATCTCG	AACTGCCCCCT	TTCGGCCGCT	TGCACCGCTC	TTTCCTTCCC
1451	AAGAAAGCGA	AAGGAGCGGG	CGCTAGGGCG	CTGGCAAGTG	TAGCGGTCAC
	TTCTTTTCGCT	TTCCCTCGCCC	GCATCCCCG	GACCGTTCAC	ATCGCCAGTG
1501	GCTGCCGCGTA	ACCACCACAC	CCGCCGCGCT	TAATGCGCCG	CTACAGGGCG
	CGACGCGCAT	TGGTGGTGTG	GGCGGCGCGA	ATTACGCGGC	GATGTCCCCG
<p style="text-align: center;">NheI</p> <p style="text-align: center;">~~~~~</p>					
1551	CGTGCTAGCG	GAGTGATAC	TGGCTACTA	TGTTGGCACT	GATGAGGGTG
	GCACGATCGC	CTCACATATG	ACCGAATGAT	ACAACCGTGA	CTACTCCCCAC
<p style="text-align: center;">XmnI</p> <p style="text-align: center;">~~~~~</p>					
1601	TCAGTGAAGT	GCTTCATGTG	GCAGGAGAAA	AAAGGCTGCA	CCGGTGCGTC
	AGTCACTTCA	CGAAGTACAC	CGTCCTCTTT	TTTCCGACGT	GGCCACGCAG
1651	AGCAGAATAT	GTGATACAGG	ATATATTCCG	CTTCCTCGCT	CACTGACTCG
	TCGTCTTATA	CACTATGTCC	TATATAAGGC	GAAGGAGCGA	GTGACTGAGC
1701	CTACGCTCGG	TCGTTGCACT	GCGGCGAGCG	GAAATGGCTT	ACGAACGGGG

**FIG. 35BBB**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

	GATGCGAGCC	AGCAAGCTGA	CGCCGCTCGC	CTTTACCGAA	TGCTTGCCCC
1751	CGGAGATTTC	CTGGAAGATG	CCAGGAAGAT	ACTTAACAGG	GAAGTGAGAG
	GCCTCTAAAG	GACCTTCTAC	GGTCCTTCTA	TGAATTGTCC	CTTCACTCTC
1801	GGCCGCGGCA	AAGCCGTTT	TCCATAGGCT	CCGCCCCCCT	GACAAGCATC
	CCGGCGCCGT	TTCGGCAAAA	AGGTATCCGA	GGCGGGGGA	CTGTTCGTAG
1851	ACGAAATCTG	ACGCTCAAAT	CAGTGGTGGC	GAAACCCGAC	AGGACTATAA
	TGCTTTAGAC	TGCGAGTTTA	GTCACCACCG	CTTTGGGCTG	TCCTGATATT
1901	AGATACCAGG	CGTTTCCCCC	TGGCGGCTCC	CTCCTGCGCT	CTCCTGTTCC
	TCTATGGTCC	GCAAAGGGGG	ACCGCCGAGG	GAGGACGCGA	GAGGACAAGG
AgeI ~~~~~					
1951	TGCCTTTCGG	TTTACCGGTG	TCATTCCGCT	GTTATGGCCG	CGTTTGCTC
	ACGGAAAGCC	AAATGGCCAC	AGTAAGGCCA	CAATACCCGC	GCAAACAGAG
2001	ATTCCACGCC	TGACACTCAG	TTCCGGGTAG	GCAGTTCGCT	CCAAGCTGGA
	TAAGGTGCGG	ACTGTAGTC	AAGGCCCATC	CGTCAAGCGA	GGTTCGACCT
2051	CTGTATGCAC	GAACCCCCCG	TTCAGTCCGA	CCGCTGCGCC	TTATCCGGTA
	GACATACGTG	CTTGGGGGGC	AAGTCAGGCT	GGCGACGCGG	AATAGGCCAT

**FIG. 35CCC**

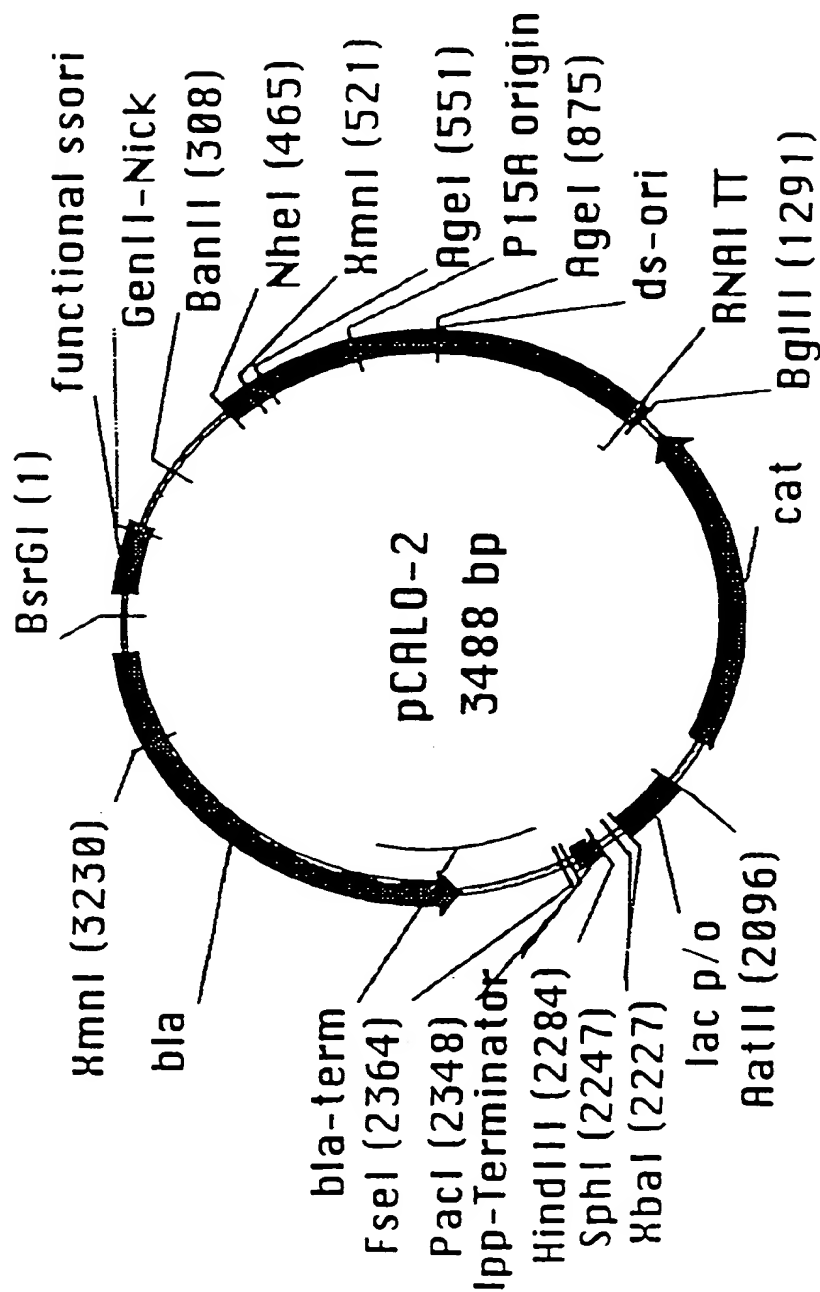
APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

2101	ACTATCGTCT TGATAGCAGA	TGAGTCCAAC ACTCAGGTTG	CCGGAAGAC GGCCTTTCTG	ATGCAAAAGC TACGTTTTCG	ACCACTGGCA TGGTGACCGT
2151	GCAGCCACTG CGTCGGTGAC	GTAATTGATT CATTAACATA	TAGAGGAGTT ATCTCCTCAA	AGTCTTGAAG TCAGAACTTC	TCATGCGCCG AGTACGCGGC
2201	GTTAAGGCTA CAATTCCGAT	AACTGAAAGG TTGACTTTCC	ACAAGTTTAA TGTTCAAAAT	GTGACTGCGC CACTGACGCG	TCCTCCAAGC AGGAGGTTTC
2251	CAGTTACCCTC GTCAATGGAG	GGTTCAAAGA CCAAGTTTCT	GTTGGTAGCT CAACCATCGA	CAGAGAACCT GTCTCTTGGG	ACGAAAAAACC TGCCTTTTGG
2301	GCCCTGCAAG CGGGACGTTTC	GCGGTTTTTT GCCCAAAAAA	CGTTTTTCAGA GCAAAAGTCT	GCAAGAGATT CGTTCTCTAA	ACGCGCAGAC TGCGCGTCTG
2351	CAAAACGATC GTTTTGCTAG	TCAAGAAGAT AGTTCTTCTA	CATCTTATTA GTAGAATAAT		

BglII

**FIG. 35DDDD**

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS



**FIG. 35EEE**

APPROVED	O.G. FIG.		
BY	CLASS	SUBCLASS	
DRAFTSMAN			

pCALO-2:

BsrGI

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1 GTACATGAAA TTGTAAACGT TAATATTTTG TTAAATTCG CGTTAAATTT
CATGTACTTT AACATTGCA ATTATAAAC AATTTAAGC GCAATTTAAA

51 TTGTTAAATC AGCTCATTTT TTAACCAATA GGCCGAAATC GGCAAAATCC
AACAAATTTAG TCGAGTAAA AATTGGTTAT CCGGCTTAG CCGTTT TAGG

101 CTTATAAATC AAAAGAATAG ACCGAGATAG GGTGAGTGT TGTTCAGTT
GAATATTTAG TTTTCTTATC TGGCTCTATC CCAACTCACA ACAAGGTCAA

151 TGGAACAAGA GTCCACTATT AAAGAACGTG GACTCCAACG TCAAAGGGCG
ACCTTGTTCT CAGGTGATAA TTTCTTGAC CTGAGGTGC AGTTTCCCGC

201 AAAAACCGTC TATCAGGGCG ATGGCCCACT ACGAGAACCA TCACCCCTAAT
TTTTTGGCAG ATAGTCCCGC TACCGGGTGA TGCTCTTGGT AGTGGGATTA

251 CAAGTTTTTT GGGGTCGAGG TGCCGTAAAG CACTAAATCG GAACCCATAA
GTTCAAAAAA CCCCAGCTCC ACGGCATTTC GTGATTTAGC CTTGGGATTT

BanII

~~~~~

301 GGGAGCCCC GATTAGAGC TTGACGGGGA AAGCCGGCGA ACGTGGCGAG

FIG. 35FFF



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

```
CCCTCGGGG CTAAATCTCG AACTGCCCCCT TTCGGCCGCT TGCACCGCTC

351 AAAGGAAGG AAGAAAGCGA AAGAGCGGG CGTAGGGCG CTGGCAAGTG
TTTCCTTCCC TTCTTTCGCT TTCTTCGCCC GCGATCCCGC GACCGTTCAC

401 TAGCGGTCAC GCTGCGCGTA ACCACCACAC CCGCCGCGCT TAATGCGCCG
ATCGCCAGTG CGACGCGCAT TGGTGGTGTG GCGGCGCGCA ATTACGCGGC

NheI
~~~~~

451 CTACAGGGCG CGTGCTAGCG GAGTGATAC TGGCTTACTA TGTGGCACT
GATGTCCCGC GCACGATCGC CTCACATATG ACCGAATGAT ACAACCGTGA

XmnI
~~~~~
AgeI

501 GATGAGGGTG TCAGTGAAGT GCTTCATGTG GCAGGAGAAA AAAGGCTGCA
CTACTCCAC AGTCACTTCA CGAAGTACAC CGTCCTCTTT TTCCGACGT

AgeI
~~~~~

551 CCGGTGCGTC AGCAGAATAT GTGATACAGG ATATATTCCG CTTCCTCGCT
GGCCACGCAG TCGTCTTATA CACTATGTCC TATATAAGGC GAAGGAGCGA

601 CACTGACTCG CTACGCTCGG TCGTTCGACT GCGGCGAGCG GAAATGGCTT
```

**FIG. 35GG**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

	GTGACTGAGC	GATGCGAGCC	AGCAAGCTGA	CGCCGCTCGC	CTTTACCGAA
651	ACGAACGGGG	CGGAGATTTC	CTGGAAGATG	CCAGGAAGAT	ACTTAACAGG
	TGCTTGCCCC	GCCTCTAAAG	GACCTTCTAC	GGTCCTTCTA	TGAATTGTCC
701	GAAGTGAGAG	GGCCGCGGCA	AAGCCGTTTT	TCCATAGGCT	CCGCCCCCCT
	CTTCACTCTC	CCGGCGCCGT	TTCGGCAAAA	AGGTATCCGA	GGCGGGGGA
751	GACAAGCATC	ACGAAATCTG	ACGCTCAAAT	CAGTGGTGGC	GAAACCCGAC
	CTGTTCTAG	TGCTTTAGAC	TGCGAGTTTA	GTCACCAACG	CTTTGGGCTG
801	AGGACTATAA	AGATACCAGG	CGTTTCCCCC	TGGCGGCTCC	CTCCTGCGCT
	TCCCTGATATT	TCTATGGTCC	GCAAAGGGGG	ACCGCCGAGG	GAGGACGCCA
			AgeI		
			~~~~~		
851	CTCCTGTTCC	TGCCTTTCGG	TTTACCGGTG	TCATTCCGCT	GTTATGGCCG
	GAGGACAAGG	ACGGAAGCC	AAATGGCCAC	AGTAAGGCGA	CAATACCGGC
901	CGTTTGTCCTC	ATTCCACGCC	TGACACTCAG	TTCCGGGTAG	GCAGTTCGCT
	GCAAACACAG	TAAGGTGCGG	ACTGTGAGTC	AAGGCCCATC	CGTCAAGCGA
951	CCAAGCTGGA	CTGTATGCAC	GAACCCCCCG	TTCAGTCCGA	CCGCTGCGCC
	GGTTCGACCT	GACATACGTG	CTTGGGGGGC	AAGTCAAGCT	GGCGACGCGG

FIG. 35HHH

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

1001	TTATCCGGTA	ACTATCGTCT	TGAGTCCAAC	CCGGAAGAC	ATGCAAAAGC
	AATAGGCCAT	TGATAGCAGA	ACTCAGGTTG	GGCCTTTCTG	TACGTTTTCG
1051	ACCACTGGCA	GCAGCCACTG	GTAATTGATT	TAGAGGAGTT	AGTCTTGAAG
	TGGTGACCGT	CGTCGGTGAC	CATTAACTAA	ATCTCCTCAA	TCAGAACTTC
1101	TCATGCGCCG	GTTAAGGCTA	AACTGAAAGG	ACAAGTTTTA	GTGACTGCGC
	AGTACGCGGC	CAATTCCGAT	TTGACTTTCC	TGTTCAAAAT	CACTGACGCG
1151	TCCTCCAAGC	CAGTTACCTC	GGTCAAAGA	GTTGGTAGCT	CAGAGAACCT
	AGGAGGTTCC	GTCAATGGAG	CCAAGTTTCT	CAACCATCGA	GTCTCTTGGA
1201	ACGAAAAACC	GCCCTGCAAG	GCGGTTTTTT	CGTTTTTCAGA	GCAAGAGATT
	TGCTTTTGG	CGGGACGTC	CGCCAAAAAA	GCAAAAGTCT	CGTTCTCTAA
BglII					
~~~~~					
1251	ACGCGCAGAC	CAAAACGATC	TCAAGAAGAT	CATCTTATTA	GATCTAGCAC
	TGCGCGTCTG	GTTTGTCTAG	AGTTCTTCTA	GTAGAATAAT	CTAGATCGTG
1301	CAGGCGTTTA	AGGGCACCAA	TAACTGCCCTT	AAAAAAATTA	CGCCCCGCCC
	GTCCGCAAAT	TCCCCGTGGTT	ATTGACGGAA	TTTTTTTAAAT	CGGGGGCGGG

**FIG. 35III**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

1351	TGCCACTCAT	CGCAGTACTG	TTGTAATTCA	TTAAGCATTC	TGCCGACATG
	ACGGTGAGTA	CGGTCATGAC	AACATTAAGT	AATTCGTAAG	ACGGCTGTAC
1401	GAAGCCATCA	CAAACGGCAT	GATGAACCTG	AATCGCCAGC	GGCATCAGCA
	CTTCGGTAGT	GTTTGCCGTA	CTACTTGGAC	TTAGCGGTG	CCGTAGTCGT
1451	CCTTGTCGCC	TTGCGTATAA	TATTTGCCCA	TAGTAAAAC	GGGGCGGAAG
	GGAACAGCGG	AACGCATATT	ATAAACGGGT	ATCACTTTTG	CCCCCGCTTC
1501	AAGTTGTCCA	TATTGGCTAC	GTTTAAATCA	AAACTGGTGA	AACTCACCCA
	TTCAACACAGT	ATAACCGATG	CAAATTTAGT	TTTGACCACT	TTGAGTGGGT
1551	GGGATTGGCT	GAGACGAAA	ACATATTCTC	AATAAACCCCT	TTAGGGAAT
	CCCTAACCGA	CTCTGCTTTT	TGTATAAGAG	TTATTTGGGA	AATCCCTTTA
1601	AGGCCAGGTT	TTCAACCGTAA	CACGCCACAT	CTTGCGAATA	TATGTGTAGA
	TCCGGTCCAA	AAGTGGCATT	GTGCGGTGTA	GAACGCTTAT	ATACACATCT
1651	AACTGCCGGA	AATCGTCGTG	GTATTCACTC	CAGAGCGATG	AAAACGTTTC
	TTGACGGCCT	TTAGCAGCAC	CATAAGTGAG	GTCTCGCTAC	TTTTCGCAAG
1701	AGTTTGCTCA	TGGA AAAACGG	TGTAACAAGG	GTGAACACTA	TCCCATATCA
	TCAAACGAGT	ACCTTTTGCC	ACATTGTTCC	CAC TTGTGAT	AGGGTATAGT

**FIG. 35JJJ**

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

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1751 CCAGCTCACC GTCTTTCATT GCCATACGGA ACTCCGGGGTG AGCATTCATC
 GGTGAGTGG CAGAAAGTAA CCGTATGCCT TGAGGCCCCAC TCGTAAGTAG

1801 AGCGGGGCAA GAATGTGAAT AAAGGCCCGA TAAAACTTGT GCTTATTTT
 TCCGCCCGTT CTTACACTTA TTTCCGGCCT ATTTTGAACA CGAATAAAAA

1851 CTTTACGGTC TTTAAAAGG CCGTAATATC CAGCTGAACG GTCGGTTAT
 GAAATGCCAG AAATTTTCC GGCATTATAG GTCGACTTGC CAGACCAATA

1901 AGGTACATTG AGCAACTGAC TGAAATGCCT CAAAATGTTT TTTACGATGC
 TCCATGTAAC TCGTTGACTG ACTTTACGGA GTTTTACAAG AAATGCTACG

1951 CATTGGGATA TATCAACGGT GGTATATCCA GTGATTTTTC TCTCCATTTT
 GTAACCCCTAT ATAGTTGCCA CCATATAGGT CACTAAAAAA AGAGGTAAAA

2001 AGCTTCCTTA GCTCCTGAAA ATCTCGATAA CTCAAAAAAT ACGCCCCGTA
 TCGAAGGAAT CGAGGACTTT TAGAGCTATT GAGTTTTTTA TCGGGGCCAT

 AatII
      ~~~~~

2051 GTGATCTTAT TTCATTATGG TGAAAGTTGG AACCTCACCC GACGTCTAAT
      CACTAGAATA AAGTAATACC ACTTTCACC TTGGAGTGGG CTGCAGATTA

2101 GTGAGTTAGC TCACTCATTA GGCACCCCCAG GCTTTACACT TTATGCTTCC
  
```

**FIG. 35KKK**

APPROVED	O.G. FIG.
SY	CLASS
BRAFTSHAR	SUBCLASS

	CACTCAATCG	AGTGAGTAAT	CCGTGGGGTC	CGAAATGTGA	AATACGAAGG	
2151	GGCTCGTATG	TTGTGTGGAA	TTGTGAGCGG	ATAACAATTT	CACACAGGAA	
	CCGAGCATAC	AACACACCTT	AACACTCGCC	TATTGTTAAA	GTGTGTCCTT	
			XbaI		SphI	
			~~~~~		~~~~~	
2201	ACAGCTATGA	CCATGATTAC	GAATTTCTAG	ACCCCCCCCC	CGCATGCCAT	
	TGTCGATACT	GGTACTAATG	CTTAAAGATC	TGGGGGGGGG	CGGTACGGTA	
				HindIII		
				~~~~~		
2251	AAC TTCGTAT	AATGTACGCT	ATACGAAGTT	ATAAGCTTGA	CCTGTGAAGT	
	TTGAAGCATA	TTACATGCCA	TATGCTTCAA	TATTCGAACT	GGACACTTCA	
					PacI	
					~~~~~	
2301	GAAAAATGGC	GCAGATTGTG	CGACATTTT	TTTGTCTGCC	GTTTAATTAA	
	CTTTTACCG	CGCTAACAC	GCTGTAAAAA	AAACAGACGG	CAAATTAATT	
				FseI		
				~~~~~		
2351	GGGGGGGGGC	CGGCCATTAT	CAAAAAGGAT	CTCAAGAAGA	TCCTTTGATC	
	CCCCCCCCCG	GCCGGTAATA	GTTTTTCCTA	GAGTCTTCT	AGGAAACTAG	

**FIG. 35LLL**

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

2401	TTTTCTACGG	GGTCTGACGC	TCAGTGGAAC	GAAAACTCAC	GTTAAGGGAT
	AAAAGATGCC	CCAGACTGCG	AGTCACCTTG	CTTTTGAGTG	CAATTCCCTA
2451	TTTGGTCATG	AGATTATCAA	AAAGGATCTT	CACCTAGATC	CTTTTAAATT
	AAACCAGTAC	TCTAATAGTT	TTTCCTAGAA	GTGGATCTAG	GAAAATTTAA
2501	AAAAATGAAG	TTTTAAATCA	ATCTAAAGTA	TATATGAGTA	AACTTGGTCT
	TTTTTACTTC	AAAATTTAGT	TAGATTTTCAT	ATATACTCAT	TTGAACCCAGA
2551	GACAGTTACC	CAATGCTTAA	TCAGTGAGGC	ACCTATCTCA	GCGATCTGTC
	CTGTCAATGG	GTTACGAATT	AGTCACTCCG	TGGATAGAGT	CGCTAGACAG
2601	TATTTTCGTTT	ATCCATAGTT	GCCTGACTCC	CCGTCGTGTA	GATAACTACG
	ATAAAGCAAG	TAGGTATCAA	CGGACTGAGG	GGCAGCACAT	CTATTGATGC
2651	ATACGGGAGG	GCTTACCATC	TGGCCCCCAGT	GCTGCAATGA	TACCGCGAGA
	TATGCCCTCC	CGAATGGTAG	ACCGGGGTCA	CGACGTTACT	ATGGCGCTCT
2701	CCCACGCTCA	CCGGCTCCAG	ATTATCAGC	AATAAACCCAG	CCAGCCGGAA
	GGGTGCGAGT	GGCCGAGGTC	TAAATAGTCG	TTATTGGTC	GGTCGGCCTT
2751	GGGCCGAGCG	CAGAAGTGGT	CCTGCAACTT	TATCCGCCCTC	CATCCAGTCT
	CCCGGCTCGC	GTCTTCACCA	GGACGTTGAA	ATAGCGGAG	GTAGGTCAGA

**FIG. 35MMM**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

2801	ATTAACCTGTT	GCCGGGAAGC	TAGAGTAAGT	AGTTCGCCAG	TTAATAGTTT
	TAATTGACAA	CGGCCCTTCG	ATCTCATCA	TCAAGCGGTC	AATTATCAAA
2851	GCGCAACGTT	GTTGCCATTG	CTACAGGCAT	CGTGGTGTCA	CGCTCGTCGT
	CGCGTTGCAA	CAACGGTAAC	GATGTCCGTA	GCACCACAGT	GCGAGCAGCA
2901	TTGGTATGGC	TTCATTACAG	TCCGGTTCCC	AACGATCAAG	GCGAGTTACA
	AACCATAACG	AAGTAAGTCG	AGGCCAAGGG	TTGCTAGTTC	CGCTCAATGT
2951	TGATCCCCCA	TGTTGTGCAA	AAAAGCGGTT	AGCTCCTTCG	GTCCCTCCGAT
	ACTAGGGGGT	ACAACACGTT	TTTTTCGCCAA	TCGAGGAAGC	CAGGAGGCTA
3001	CGTTGTCAGA	AGTAAGTTGG	CCGCAGTGTT	ATCACTCATG	GTTATGGCAG
	GCAACAGTCT	TCATTCAACC	GGCGTCACAA	TAGTGAGTAC	CAATACCGTC
3051	CACTGCATAA	TTCTCTTACT	GTCA TGCCAT	CCGTAAGATG	CTTTTCTGTG
	GTGACGTATT	AAGAGAATGA	CAGTACGGTA	GGCATTCTAC	GAAAAGACAC
3101	ACTGGTGAGT	ACTCAACCAA	GTCA TTCTGA	GAATAGTGT	TGCGGCGACC
	TGACCACTCA	TGAGTTGGTT	CAGTAAGACT	CTTATCACAT	ACGCCGCTGG
3151	GAGTTGCTCT	TGCCCCGGCGT	CAATACGGGA	TAATACCGCG	CCACATAGCA
	CTCAACGAGA	ACGGGCCGCA	GTTATGCCCT	ATTATGGCGC	GGTGATCGT

**FIG. 35NNN**



APPROVED	0.6.FIG.	
BY	CLASS	SUBCLASS
CRAFTSMAN		

# XmnI

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3201  GAACTTTAAA AGTGCTCATC ATTGGAAAAC GTTCTTCGGG GCGAAAACCTC
      CTTGAAATTT TCACGAGTAG TAACCTTTTG CAAGAAGCCC CGCTTTTGAG

3251  TCAAGGATCT TACCGCTGTT GAGATCCAGT TCGATGTAAC CCACTCGCGC
      AGTTCCCTAGA ATGGCGACAA CTCTAGGTCA AGCTACATTG GGTGAGCGCG

3301  ACCCAACTGA TCCTCAGCAT CTTTACTTT CACCAGCGTT TCTGGGTGAG
      TGGGTTGACT AGGAGTCGTA GAAATGAAA GTGGTCGCAA AGACCCACTC

3351  CAAAAACAGG AAGGCAAAAT GCCGCAAAA AGGGAATAAG GCGACACGG
      GTTTTGTCC TTCCGTTTTA CGCGTTTTT TCCCTTATTC CCGCTGTGCC

3401  AAATGTTGAA TACTCATACT CTTCCTTTT CAATATTATT GAAGCATTTA
      TTTACAACCTT ATGAGTATGA GAAGGAAAAA GTTATAATAA CTTCGTAAAT
  
```

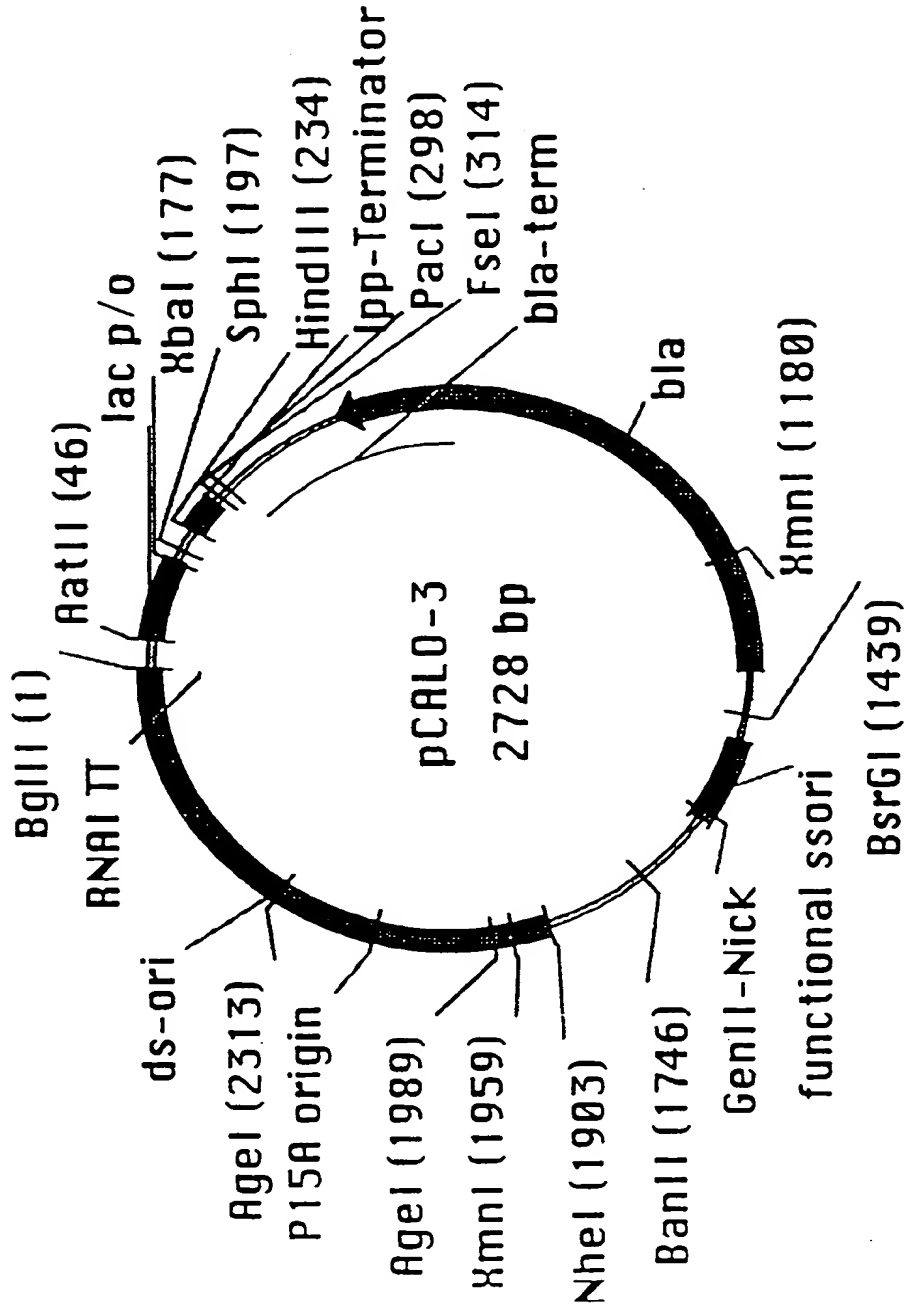
## BsrGI

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3451  TCAGGGTTAT TGTCTCATGA GCGGATACAT ATTTGAAT
      AGTCCCAATA ACAGAGTACT CGCCTATGTA TAAACTTA
  
```

FIG. 35000

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		



**FIG. 35PPP**

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

pCALO-3:

BglII			AatII
~~~~~			~~~~~
1	GATCTCATAA	CTTCGTATAA	TGTATGCTAT
	CTAGAGTATT	GAAGCATATT	ACATACGATA
			TGCTTCAATA
			CTGCAGATTA
51	GTGAGTTAGC	TCACTCATT	GGCACCCAG
	CACTCAATCG	AGTGAGTAAT	CCGTGGGGTC
			CGAAATGTGA
			AATACGAAGG
101	GGCTCGTATG	TTGTGTGGAA	TTGTGAGCGG
	CCGAGCATAC	AACACACCTT	AACACTCGCC
			TATGTTAAA
			GTGTGTCCTT
151	ACAGCTATGA	CCATGATTAC	GAATTTCTAG
	TGTCGATACT	GGTACTAATG	CTTAAAGATC
			ACCCCCCCC
			TGGGGGGGG
			CGCATGCCAT
			CGGTACGGTA
201	AACCTTCGTAT	AATGTACGCT	ATACGAAGTT
	TTGAAGCATA	TTACATGCGA	TATGCTTCAA
			TATTCGAACT
			GGACACTTCA

FIG. 35QQQ

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

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~ ~ ~ ~ ~
251  GAAAAATGGC GCAGATTGTG CGACATTTT TTTGTCTGCC GTTAAATTAA
      CTTTTTACCG CGTCTAACAC GCTGTAAAAA AAACAGACGG CAAATTAAAT

      FseI
      ~ ~ ~ ~ ~
301  GGGGGGGGGC CGGCCATTAT CAAAAAGGAT CTCAAGAAGA TCCTTTGATC
      CCCCCCCCCG GCCGGTAATA GTTTTCCCTA GAGTCTTCT AGGAAACTAG

351  TTTTCTACGG GGCTGACGC TCAGTGGAAC GAAAACTCAC GTTAAGGGAT
      AAAGATGCC CCAGACTGCG AGTCACCTTG CTTTGTAGTG CAATTCCCCTA

401  TTTGGTCATG AGATTATCAA AAAGGATCTT CACCTAGATC CTTTAAATTT
      AAACCAGTAC TCTAATAGTT TTTCCCTAGAA GTGGATCTAG GAAATTTTAA

451  AAAAAATGAAG TTTTAAATCA ATCTAAAGTA TATATGAGTA AACTTGGTCT
      TTTTTTACTTC AAAATTTAGT TAGATTTCAT ATATACTCAT TTGAACCAGA

501  GACAGTTACC CAATGCTTAA TCAGTGAGGC ACCTATCTCA GCGATCTGTC
      CTGTCAATGG GTTACGAATT AGTCACTCCG TGGATAGAGT CGCTAGACAG

551  TATTTCGTTT ATCCATAGTT GCCTGACTCC CCGTCGTGTA GATAACTACG
      ATAAAGCAAG TAGGTATCAA CGGACTGAGG GGCAGCACAT CTATTGATGC
  
```

FIG. 35RRR

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

601	ATACGGGAGG	GCTTACCATC	TGGCCCCCAGT	GCTGCAATGA	TACCGCGAGA
	TATGCCCTCC	CGAATGGTAG	ACCGGGGTCA	CGACGTTACT	ATGGCGCTCT
651	CCCACGCTCA	CCGGCTCCAG	ATTTATCAGC	AATAAACCCAG	CCAGCCGGAA
	GGTGCGAGT	GGCCGAGGTC	TAAATAGTCG	TTATTTGGTC	GGTCGGCCTT
701	GGGCCGAGCG	CAGAAGTGGT	CCTGCAACTT	TATCCGCCCTC	CATCCAGTCT
	CCCGGCTCGC	GTCTTCACCA	GGACGTTGAA	ATAGGCGGAG	GTAGGTCAGA
751	ATTAACCTGTT	GCCGGGAAGC	TAGAGTAAGT	AGTTCGCCCAG	TTAATAGTTT
	TAAATTGACAA	CGGCCCTTCG	ATCTCATTCA	TCAAGCGGTC	AATTATCAAA
801	GCGCAACGTT	GTTGCCATTG	CTACAGGCAT	CGTGGTGTC	CGCTCGTCGT
	CGCGTTGCAA	CAACGGTAAC	GATGTCCGTA	GCACCACAGT	GCGAGCAGCA
851	TTGGTATGGC	TTCATTTCAGC	TCCGGTTCCC	AACGATCAAG	GCGAGTTACA
	AACCATAACCG	AAGTAAGTCG	AGGCCAAGGG	TTGCTAGTTC	CGCTCAATGT
901	TGATCCCCCA	TGTTGTGCAA	AAAAGCGGTT	AGCTCCTTCG	GTCCCTCCGAT
	ACTAGGGGGT	ACAACACGTT	TTTTTCGCCAA	TCGAGGAAGC	CAGGAGGCTA
951	CGTTGTCAGA	AGTAAGTTGG	CCGCAGTGTT	ATCACTCATG	GTTATGGCAG
	GCAACAGTCT	TCATTCAACC	GGCGTCACAA	TAGTGAGTAC	CAATACCGTC

FIG. 35SSS

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

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1001  CACTGCATAA  TTCTCTTACT  GTCATGCCAT  CCGTAAGATG  CTTTCTGTG
      GTGACGTATT  AAGAGAATGA  CAGTACGGTA  GGCATTCTAC  GAAAGACAC

1051  ACTGGTGAGT  ACTCAACCAA  GTCATTCTGA  GAATAGTGTA  TGCGGCGACC
      TGACCACTCA  TGAGTTGGTT  CAGTAAGACT  CTTATCACAT  ACGCCGCTGG

1101  GAGTTGCTCT  TGCCCGGCGT  CAATACGGGA  TAATACCGCG  CCACATAGCA
      CTCAACGAGA  ACGGGCCGCA  GTTATGCCCT  ATTATGGCGC  GGTGTATCGT

      XmnI
      ~~~~~

1151  GAACTTTAAA  AGTGCTCATC  ATTGGAAAC  GTTCTTCGGG  GCGAAATC
      CTTGAAATTT  TCACGAGTAG  TAACCTTTTG  CAAGAAGCCC  CGCTTTTGAG

1201  TCAAGGATCT  TACCGCTGTT  GAGATCCAGT  TCGATGTAAC  CCACTCGCGC
      AGTTCCTAGA  ATGGCGACAA  CTCTAGGTCA  AGCTACATTG  GGTGAGCGCG

1251  ACCCAACTGA  TCCTCAGCAT  CTTTACTTT  CACCAGCGTT  TCTGGGTGAG
      TGGGTTGACT  AGGAGTCGTA  GAAATGAAA  GTGGTCGCAA  AGACCCACTC

1301  CAAAACACAG  AAGGCAAAAT  GCCGCAAAA  AGGGAATAAG  GCGACACGG
      GTTTTGTCC  TTCCGTTTAA  CGCGTTTTC  TCCCTTATTC  CCGCTGTGCC

1351  AAATGTTGAA  TACTCATACT  CTTCCCTTTT  CAATATTATT  GAAGCATTTA
  
```

FIG. 35TTT

APPROVED	O.G.FIG.
BY	CLASS
GRAFTSMAN	SUBCLASS

TTTACAACTT ATGAGTATGA GAAGGAAAAA GTTATAATAA CTTCGTAAAT

BsrGI

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1401 TCAGGGTTAT TGTCTCATGA GCGGATACAT ATTTGAATGT ACATGAAATT  
 AGTCCCAATA ACAGAGTACT CGCCTATGTA TAAACTTACA TGTACTIONTAA

1451 GTAAACGTTA ATATTTTGTG AAAATTGCGG TTAAATTTTT GTTAAATCAG  
 CATTTGCAAT TATAAAACAA TTTTAAGCGC AATTAAAAA CAATTAGTC

1501 CTCATTTTTT AACCAATAGG CCGAAATCGG CAAAATCCCT TATAAATCAA  
 GAGTAAAAAA TTGGTTATCC GGCTTTAGCC GTTTAGGGA ATATTAGTT

1551 AAGAATAGAC CGAGATAGGG TTGAGTGTG TTCCAGTTTG GAACAAGAGT  
 TTCCTTATCTG GCTCTATCCC AACTCACAAAC AAGTCAAAC CTTGTTCTCA

1601 CCACTATTAA AGAACGTGGA CTCCAACGTC AAAGGGCGAA AAACCGTCTA  
 GGTGATAAAT TCTTGACACCT GAGGTGTCAG TTTCCCGCTT TTTGGCAGAT

1651 TCAGGGCGAT GGCCCACTAC GAGAACCATC ACCCTAATCA AGTTTTTTGG  
 AGTCCCGCTA CCGGGTGATG CTCTTGGTAG TGGGATTAGT TCAAAAAAAC

BanII

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FIG. 35UUU

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

1701	GGTCGAGGTG	CCGTAAAGCA	CTAAATCGGA	ACCCCTAAAGG	GAGCCCCCGA
	CCAGCTCCAC	GGCATTTCGT	GATTAGCCT	TGGATTTC	CTCGGGGGCT
1751	TTTAGAGCTT	GACGGGGA	GCCGGCGAAC	GTGGCCGAGAA	AGGAAGGGAA
	AAATCTCGAA	CTGCCCCCTT	CGCCCGCTTG	CACCGCTCTT	TCCTTCCCTT
1801	GAAAGCGAAA	GGAGCGGGCG	CTAGGGCGCT	GGCAAGTGTA	GCGGTCACGC
	CTTTCGCTTT	CCTCGCCCCG	GATCCCCGGA	CCGTTACAT	CGCCAGTGCG
1851	TGCGCGTAAC	CACCACACCC	GCCGCGCTTA	ATGCGCCGCT	ACAGGGCGCG
	ACGCGCATTG	GTGGTGTGG	CGCGCGGAAT	TACGCGGCGA	TGTCCCCGCG
NheI					
~~~~~					
1901	TGCTAGCGGA	GTGTATACTG	GCTTACTATG	TTGGCACTGA	TGAGGGTGTC
	ACGATCGCCT	CACATATGAC	CGAATGATAC	AACCGTGACT	ACTCCCCACAG
XmnI					
~~~~~					
1951	AGTGAAGTGC	TTCATGTGGC	AGGAGAAAAA	AGGCTGCACC	GGTGCGTCAG
	TCACTTCACG	AAGTACACCG	TCCTCTTTTT	TCCGACGTGG	CCACGCAGTC
2001	CAGAATATGT	GATACAGGAT	ATATTCCGCT	TCCTCGCTCA	CTGACTCGCT
	GTCCTTATACA	CTATGTCCTA	TATAAGGCGA	AGGAGCGAGT	GACTGAGCGA
AgeI					
~~~~~					

**FIG. 35VV**



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

2051	ACGCTCGGTC	GTCGACTGC	GGCAGCGGA	AATGGCTTAC	GAACGGGGCG
	TCCGAGCCAG	CAAGCTGACG	CCGCTCGCCT	TTACCGAATG	CTTGCCCCCG
2101	GAGATTTCCT	GGAAGATGCC	AGGAAGATAC	TTAACAGGGA	AGTGAGAGGG
	CTCTAAAGGA	CCTTCTACGG	TCCTTCTATG	AATTGTCCCT	TCACTCTCCC
2151	CCGCGGCAAA	GCCGTTTTC	CATAGGCTCC	GCCCCCCTGA	CAAGCATCAC
	GGCGCCGTTT	CGCAAAAG	GTATCCGAGG	CGGGGGGACT	GTTCGTAAGT
2201	GAAATCTGAC	GCTCAAATCA	GTGGTGCGGA	AACCCGACAG	GACTATAAAG
	CTTTAGACTG	CGAGTTTAGT	CACCACCGCT	TTGGGCTGTC	CTGATATTTC
2251	ATACCAAGCG	TTTCCCCCTG	GCGGCTCCCT	CCTGCGCTCT	CCTGTTCCCTG
	TATGGTCCCG	AAAGGGGGAC	CGCCGAGGGA	GGACGCGAGA	GGACAAGGAC
AgeI					
~~~~~					
2301	CCTTTCGGTT	TACCGGTGTC	ATTCCGCTGT	TATGGCCCGG	TTTGTCTCAT
	GAAAGCCCAA	ATGGCCACAG	TAAGGCGACA	ATACCGGCGC	AAACAGAGTA
2351	TCCACGCCCTG	ACACTCAGTT	CCGGGTAGGC	AGTTCGCTCC	AAGCTGGACT
	AGGTGCGGAC	TGTAGTCAA	GGCCCATCCG	TCAAGCGAGG	TTGACCTGA

FIG. 35WW

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

2401	GTATGCACGA	ACCCCCCGTT	CAGTCCGACC	GCTGGCCCTT	ATCCGGTAAC
	CATACGTGCT	TGGGGGGCAA	GTCAGGCTGG	CGACCGGAA	TAGGCCATTG
2451	TATCGTCTTG	AGTCCAACCC	GGAAGACAT	GCAAAGCAC	CACTGGCAGC
	ATAGCAGAAC	TCAGGTTGGG	CCTTCTGTG	CGTTTTCGTG	GTGACCGTCG
2501	AGCCACTGGT	AATTGATTGA	GAGGAGTTAG	TCTTGAAGTC	ATCGGCCGGT
	TCGGTGACCA	TTAACTAAAT	CTCCTCAATC	AGAACTTCAG	TACGCGGCCA
2551	TAAGGCTAAA	CTGAAAGGAC	AAGTTTTAGT	GACTGCGCTC	CTCCAAGCCA
	ATTCCGATT	GACTTTCCTG	TTCAAAATCA	CTGACGCGAG	GAGGTTCCGT
2601	GTTACCTCGG	TTCAAAGAGT	TGGTAGCTCA	GAGAACCTAC	GAAAAACCGC
	CAATGGAGCC	AAGTTTCTCA	ACCATCGAGT	CTCTTGATG	CTTTTGGCG
2651	CCTGCAAGGC	GGTTTTTTCG	TTTTCAGAGC	AAGAGATTAC	GCGCAGACCA
	GGACGTTCCG	CCAAAAAAGC	AAAAGTCTCG	TTCTCTAATG	CGCGTCTGGT

BglII

2701	AAACGATCTC	AAGAAGATCA	TCTTATTA
	TTTGCTAGAG	TTCTTCTAGT	AGAAATAAT

FIG. 35XXX

M1: PCR using template

NoVspAatII: TAGACGTC

M2: synthesis

BloxA-A: TATGAGATCTCATAACTTCGTATAATGTACGCTATACG -
AAGTTAT

BloxA-B: TAATAACTTCGTATAGCATAACATTATACGAAGTTATG -
AGATCTCA

M3: PCR, NoVspAatII as second oligo

XloxS-muta: CATTTTTGCCCTCGTTATCTACGCATGCGATAACTTCGTA -
TAGCGTACATTATACGAAGTTATTCTAGACATGGTCATAGCTGTTTCCTG

M7-I: PCR

gIIINEW-fow: GGGGGGAATTCGGTGGTGGTGGATCTGCGTGCGCTG -
AAACGGTTGAAAGTTG

gIIINEW-rev: CCCCCCAAGCTTATCAAGACTCCTTATTACG

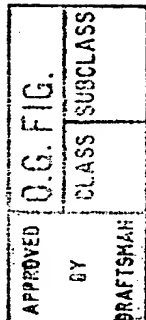
M7-II: PCR

gIIIss-fow: GGGGGGGGAATTCGGAGGCGGTCCGGTGGTGGC

M7-III: PCR

gIIIsupernew-fow: GGGGGGGGAATTCGAGCAGAAGCTGATCTCT -
GAGGAGGATCTGTAGGGTGGTGGCTCTGGTTCCGGTGATTTG

FIG. 35YYY



M8: synthesis

lox514-A: CCATAACTTCGTATAATGTACGCTATACGAAGTTATA

lox514-B: AGCTTATAACTTCGTATAGCGTACATTATACGAAGT-
TATGGCATG

M9II: synthesis

M9II-fow: AGCTTGACCTGTGAAGTGAAAAATGGCGCAGATT-
GTGCGACATTTTTTTGTCTGCCGTTAATTAAAGGGGGGGT

M9II-rev: GTACACCCCCCCCCAGGCCGGCCCCCCCCCCCCCTTTAA-
TTAAACGGCAGACAAAAAAAATGTCGCACAATCTGCG

M10II: assembly PCR with template

bla-fow: GGGGGGGTGTACATTCAAATATGTATCCGCTCATG

bla-seq4: GGGTTACATCGAACTGGATCTC

bla1-muta: CCAGTTCGATGTAACCCACTCGCGCACCCAACTGATC-
CTCAGCATCTTTACTTTCACC

blall-muta: ACTCTAGCTTCCCGGCAACAGTTAATAGACTGGATG-
GAGGCGG

bla-NEW: CTGTTGCCGGGAAGCTAGAGTAAG

bla-rev: CCCCCCTTAATTAAGGGGGGGGGCCGGCCATTATCAAA-
AAGGATCTCAAGAAGATCC

M11II/III: PCR, site-directed mutagenesis

FIG. 35ZZZ

APPROVED	O.G. FIG.	
	BY	CLASS / SUBCLASS
DRAFTSMAN		

f1-fow: GGGGGGGGCTAGCACGCGCCCTGTAGCGGCGCATTAA
f1-rev: CCCCCCTGTACATGAAATTGTAAACGTTAATATTTTG
f1-t133.muta: GGGCGATGGCCCACTACGAGAACCATCACCCCTAATC

M12: assembly PCR using template

p15-fow: GGGGGGAGATCTAATAAGATGATCTTCTTGAG
p15-NEWI: GAGTTGGTAGCTCAGAGAACCTACGAAAAACCGCCCTG-
CAAGGCG
p15-NEWII: GTAGGTTCTCTGAGCTACCAACTC
p15-NEWIII: GTTCCCCCTGGCGGCTCCCTCCTGCGCTCTCCTGTTCT-
GCC
p15-NEWIV: AGGAGGGAGCCGCCAGGGGGGAAAC
p15-rev: GACATCAGCGCTAGCGGAGTGTATAC

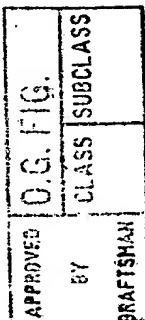
M13: synthesis

BloxXB-A: GATCTCATAACTTCGTATAATGTATGCTATACGAAGTTA-
TTCA
BloxXB-B: GATCTGAATAACTTCGTATAGCATACATTATACGAAGTTA-
TGAGA

M14-Ext2: PCR, site-directed mutagenesis

ColEXT2-fow: GGGGGGGGAGATCTGACCAAAATCCCTTAACGTGAG
Col-mutal: GGTATCTGCGCTCTGCTGTAGCCAGTTACCTTCGG

FIG. 35AAAA



Col-rev: CCCCCCGCTAGCCATGTGAGCAAAAGGCCAGCAA

M17: assembly PCR using template

CAT-1: GGGACGTCGGGTGAGGTTCCAAC

CAT-2: CCATACGGAACTCCGGGTGAGCATTCATC

CAT-3: CCGGAGTTCGGTATGG

CAT-4: ACGTTTAAATCAAACTGG

CAT-5: CCAGTTTTGATTTAAACGTAGCCAATATGGACAACCTTCTC-
GCCCCGTTTTCACTATGGGCAAATATT

CAT-6: GGAAGATCTAGCACCAGGCGTTTAAG

M41: assembly PCR using template

LAC1: GAGGCCGGCCATCGAATGGCGCAAAAC

LAC2: CGCGTACCGTCCTCATGGGAGAAAATAATAC

LAC3: CCATGAGGACGGTACGCGACTGGGCGTGGAGCATCTGGTCGCA-
TTGGGTCACCAGCAAATCCGCTGTTAGCTGGCCCATTAAG

LAC4: GTCAGCGGCGGGATATAACATGAGCTGTCCTCGGTATCGTCG

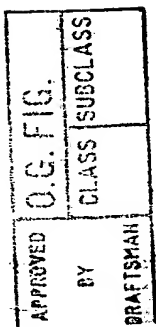
LAC5: GTTATATCCCGCCGCTGACCACCATCAAAC

LAC6: CATCAGTGAATCGGCCAACGCGCGGGGAGAGGCGGTTTGCGT4TTG-
GGAGCCAGGGTGGTTTTTC

LAC7: GGTTAATTAACCTCACTGCCCCGCTTTCAGTCGGGAAACCTGTCGTGCC-
AGCTGCATCAGTGAATCGGCCAAC

M41-MCS-fow: CTAGACTAGTGTTTAAACCGGACCGGGGGGGGGGCTT-
AAGGGGGGGGGGGGGG

FIG. 35BBBB



M41-MCS-rev: CTAGCCCCCCCCCCCCCTTAAGCCCCCCCCCGGTCCGGT-
TTAAACACTAGT

M41-fow: CTAGACTAGTGTTTAAACCGGACCGGGGGGGGGCTTAA-
GGGGGGGGGGGG

M41-rev: CCCCCCTTAAGTGGGCTGCAAAACAAAACGGCCTCC-
TGTCAGGAAGCCGCTTTTATCGGGTAGCCTCACTGCCCCGCTTCC

M41-A2: GTTGTGTGCCACGCGGTTAGGAATGTAATTCAGCTCCGC

M41-B1: AACCGCGTGGCACAACAAC

M41-B2: CTCGTTCTACCATCGACACGACCACGCTGGCACCCAGTTG

M41-C1: GTGTCGATGGTAGAACGAAG

M41-CII: CCACAGCAATAGCATCCTGGTCATCCAGCGGATAGTT-
AATAATCAGCCCACTGACACGTTGCGCGAG

M41-DI: GACCAGGATGCTATTGCTGTGG

M41-DII: CAGCGCGATTTGCTGGTGGCCCAATGCGACCAGATGC

M41-EI: CACCAGCAAATCGCGCTG

M41-EII: CCCGGACTCGGTAATGGCACGCATTGCGCCCAGCGCC

M41-FI: GCCATTACCGAGTCCGGG

M42: synthesis

Eco-H5-Hind-fow: AATTCCACCATCATCACCATTGACGTCTA

Eco-H5-Hind-rev: AGCTTAGACGTCAATGGTGATGATGGTGG

FIG. 35CCCC

APPROVED	C.G. FIG.	
	CLASS	SUBCLASS
BY	DRAFTSMAN	

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

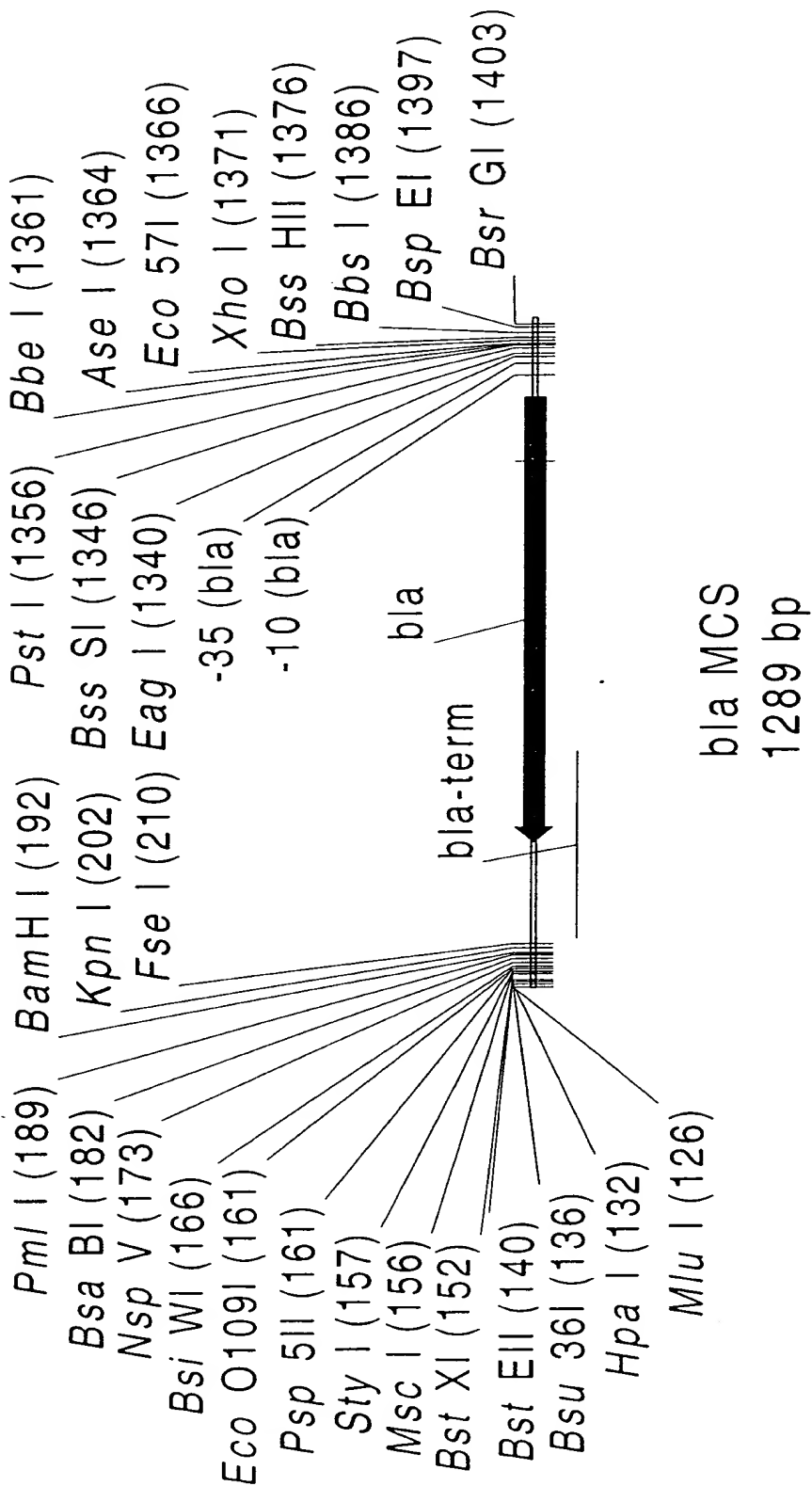


FIG. 36A

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

StyI

~~~~~

Psp5II

~~~~~

EcoO109I

~~~~~

BstXI

~~~~~

MscI

~~~~~

BsiWI NspV

~~~~~

Bsu36I

~~~~~

BstEII

~~~~~

MluI

~~~~~

HpaI

~~~~~

126

CGCGTTAACC TCAGGTGACC AAGCCCCCTGG CCAAGGTCCC GTACGTTCCA
 GCGCAATTGG AGTCCACTGG TTCGGGGGACC GGTTCAGGG CATGCAAGCT

PmlI

~~~~~

FseI

~~~~~

KpnI

~~~~~

NspVBsaBI

~~~~~

BamHI

~~~~~

176

AGATTACCAT CACGTGGATC CGGTACCAGG CCGGCCATTA TCAAAAAGGA  
 TCTAATGGTA GTGCACCTAG GCCATGGTCC GGCCGGTAAT AGTTTTCCT

226

TCTCAAGAAG ATCCTTTGAT CTTTCTACG GGTCTGACG CTCAGTGGAA  
 AGAGTTCCTC TAGGAAACTA GAAAAGATGC CCCAGACTGC GAGTCACCTT

276

CGAAAACTCA CGTTAAGGA TTTTGGTCAT GAGATTATCA AAAAGGATCT  
 GCTTTTGAGT GCAATTCCCT AAAACCAGTA CTCTAATAGT TTTTCCCTAGA

FIG. 36B

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

|     |                           |                           |                           |                           |                           |
|-----|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 326 | TCACCTAGAT<br>AGTGGATCTA  | CCTTTTAAAT<br>GGAAAATTTA  | TAAAAATGAA<br>ATTTTACTT   | GTTTAAATC<br>CAAAATTTAG   | AATCTAAAGT<br>TTAGATTTC   |
| 376 | ATATATGAGT<br>TATATACTCA  | AAACTTGGTC<br>TTTGAACCCAG | TGACAGTTAC<br>ACTGTCAATG  | CAATGCTTAA<br>GTTACGAATT  | TCAGTGAGGC<br>AGTCACTCCG  |
| 426 | ACCTATCTCA<br>TGGATAGAGT  | GGATCTGTC<br>CGCTAGACAG   | TATTTCTGTC<br>ATAAAGCAAG  | ATCCATAGTT<br>TAGGTATCAA  | GCCTGACTCC<br>CGGACTGAGG  |
| 476 | CCGTCGTGTA<br>GGCAGCACAT  | GATAACTACG<br>CTATTGATGC  | ATACGGGAGG<br>TATGCCCTCC  | GCTTACCATC<br>CGAATGGTAG  | TGGCCCCAGT<br>ACCGGGGTCA  |
| 526 | GCTGCAATGA<br>CGACGTTACT  | TACCGCGAGA<br>ATGGCGCTCT  | CCCACGCTCA<br>GGTGCGAGT   | CCGGCTCCAG<br>GGCCGAGGTC  | ATTTATCAGC<br>TAAATAGTCG  |
| 576 | AATAAACCAG<br>TTATTTTGGTC | CCAGCCGGAA<br>GGTCGGCCTT  | GGCCCGAGCG<br>CCCAGCTCGC  | CAGAAAGTGGT<br>GTCTTCACCA | CCTGCAACTT<br>GGACGTTGAA  |
| 626 | TATCCGCCCTC<br>ATAGGCGGAG | CATCCAGTCT<br>GTAGGTCAGA  | ATTAAGTGT<br>TAATTGACAA   | GCCGGGAAGC<br>CGGCCCTTCG  | TAGAGTAAGT<br>ATCTCATTTCA |
| 676 | AGTTCGCCCAG<br>TCAAGCGGTC | TTAATAGTTT<br>AATTATCAAA  | GCGCAACGTT<br>CGCGTTGCCAA | GTTGCCATTG<br>CAACGGTAAC  | CTACAGGCAT<br>GATGTCCCGTA |

**FIG. 36C**

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

|      |             |             |            |            |            |
|------|-------------|-------------|------------|------------|------------|
| 726  | CGTGGTGTC   | CGCTCGTCGT  | TTGGTATGGC | TTCATTCAGC | TCCGGTTCCC |
|      | GCACCAACAGT | GCGAGCAGCA  | AACCATACCG | AAGTAAGTCG | AGGCCAAGGG |
| 776  | AACGATCAAG  | GCGAGTTACA  | TGATCCCCCA | TGTTGTGCAA | AAAAGCGGTT |
|      | TTGCTAGTTC  | CGCTCAATGT  | ACTAGGGGGT | ACAACACGTT | TTTTCGCCAA |
| 826  | AGCTCCTTCG  | GTCTCCCGAT  | CGTTGTCAGA | AGTAAGTTGG | CCGCAGTGTT |
|      | TCGAGGAAGC  | CAGGAGGCTA  | GCAACAGTCT | TCATTCAACC | GGGTCACAA  |
| 876  | ATCACTCATG  | GTTATGGCAG  | CACTGCATAA | TTCTCTTACT | GTCATGCCAT |
|      | TAGTGAGTAC  | CAATACCGTC  | GTGACGTATT | AAGAGAATGA | CAGTACGGTA |
| 926  | CCGTAAGATG  | CTTTTCTGTG  | ACTGGTGAGT | ACTCAACCAA | GTCATTCTGA |
|      | GGCATTCTAC  | GAAAAGACAC  | TGACCACTCA | TGAGTTGGTT | CAGTAAGACT |
| 976  | GAATAGTGTA  | TGCGGCGACC  | GAGTTGCTCT | TGCCCGGCGT | CAATACGGGA |
|      | CTTATCACAT  | ACGCCGCTGG  | CTCAACGAGA | ACGGCCGCA  | GTTATGCCCT |
| 1026 | TAATACCGCG  | CCACATAGCA  | GAACTTTAAA | AGTGCTCATC | ATTGGAAAC  |
|      | ATTATGGCGC  | GGTGATATCGT | CTTGAAATTT | TCACGAGTAG | TAACCTTTTG |
| 1076 | GTTCTTCGGG  | GCGAAAACTC  | TCAAGGATCT | TACCGCTGTT | GAGATCCAGT |
|      | CAAGAAGCCC  | CGCTTTTGAG  | AGTTCCTAGA | ATGGCGACAA | CTCTAGGTCA |

FIG. 36D

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

```

1126  TCGATGTAAC  CCACTCGTGC  ACCCAACTGA  TCTTCAGCAT  CTTTACTTT
      AGCTACATTG  GGTGAGCAGG  TGGGTTGACT  AGAAGTCGTA  GAAAATGAAA
      BSSSI
      ~~~~~

1176 CACCAGCGTT TCTGGGTGAG CAAAACAGG AAGGCAAAAT GCCGCAAAA
 GTGGTCGCAA AGACCCACTC GTTTTGTGCC TTCCGTTTTA CGCGTTTTT

1226 AGGGAATAAG GGCACACAGG AAATGTTGAA TACTCATACT CTTCCTTTT
 TCCCTTATTC CCGCTGTGCC TTTACAACCT ATGAGTATGA GAAGGAAAA

1276 CAATATTATT GAAGCATTTA TCAGGGTTAT TGTCTCATGA GCGGATACAT
 GTTATAATAA CTTCGTAAAT AGTCCCAATA ACAGAGTACT CGCCTATGTA

 PstI XhoI
      ~~~~~                      ~~~~~

      EagI  BssSI  BbeI  AseI  BssHII
      ~~~~~                      ~~~~~

1326 ATTTGAATGT ACTCGGCCGC ACGAGCTGCA GCGGCCATTA ATGGCTCGAG
 TAAACTTACA TGAGCCGGCG TGCTCGACGT CCGCGGTAAT TACCGAGCTC

 BssHII BspEI BsrGI
      ~~~~~                      ~~~~~
  
```

FIG. 36E

|           |           |          |
|-----------|-----------|----------|
| APPROVED  | O.G. FIG. |          |
| BY        | CLASS     | SUBCLASS |
| DRAFTSMAN |           |          |

1376 CGCGCTTCAG CGCTTTGTCT TCCGGATGTA CATGAAATT  
 GCGCGAAGTC GCGAACAGA AGCCCTACAT GTACTTTAA  
 Eco57I BbsI  
 ~~~~~


FIG. 36F

FIG. 37A

O.G. FIG.	SUBCLASS	
	CLASS	
APPROVED	BY	DRAFTSMAN

20 30 40

-3'

T F A  Y Y C Q
 T T T G C G A C T T A T T A T T G C C A
 V G V Y Y C
 G T G G G C G T G T A T T A T T G C C A
 V A V Y Y C
 G T G G C G G T G T A T T A T T G C C A

A	
C	
D	
E	
F	T T T
G	
H	C A T
I	
K	
L	C T T
M	A T G
N	
P	
Q	C A G
R	
S	
T	
V	
W	
Y	

80% Q

FIG. 37B

APPROVED	BY	DRAFTSMAN
O.G. FIG.		CLASS SUBCLASS

50

60

3'- G G A

G

T
A C C T

G

T
A C C T

G

T
A C C T

G C T			G C T		G C T
G A T	G A T	G A T	G A T		G A T
G A G			G A G		G A G
T T T			T T T		T T T
G G T	G G T	G G T	G G T		G G T
C A T			C A T		C A T
A T T			A T T		A T T
A A G			A A G		A A G
C T T			C T T		C T T
A T G			A T G		A T G
A A T	A A T	A A T	A A T		A A T
			C C T	C C T	C C T
C A G			C A G		C A G
C G T			C G T		C G T
T C T	T C T	T C T	T C T	T C T	T C T
A C T			A C T		A C T
G T T			G T T		G T T
T G G			T G G		T G G
T A T	T A T		T A T		T A T
50% Y			80% P		

FIG. 37C

FIG. 37D

FIG. 38A

FIG. 38B

FIG. 38C

APPROVED	O.G. FIG.	CLASS	SUBCLASS
BY			
DRAFTSMAN			

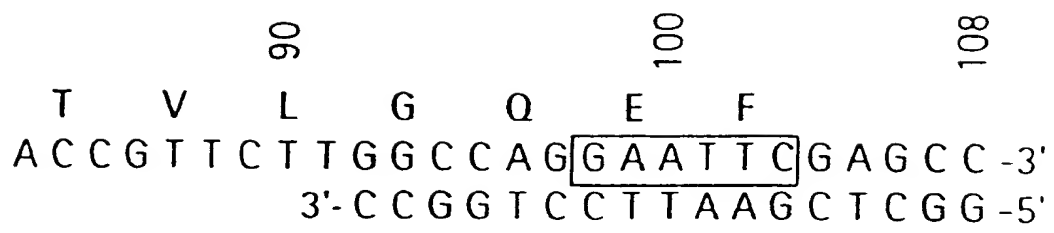


FIG. 38D

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

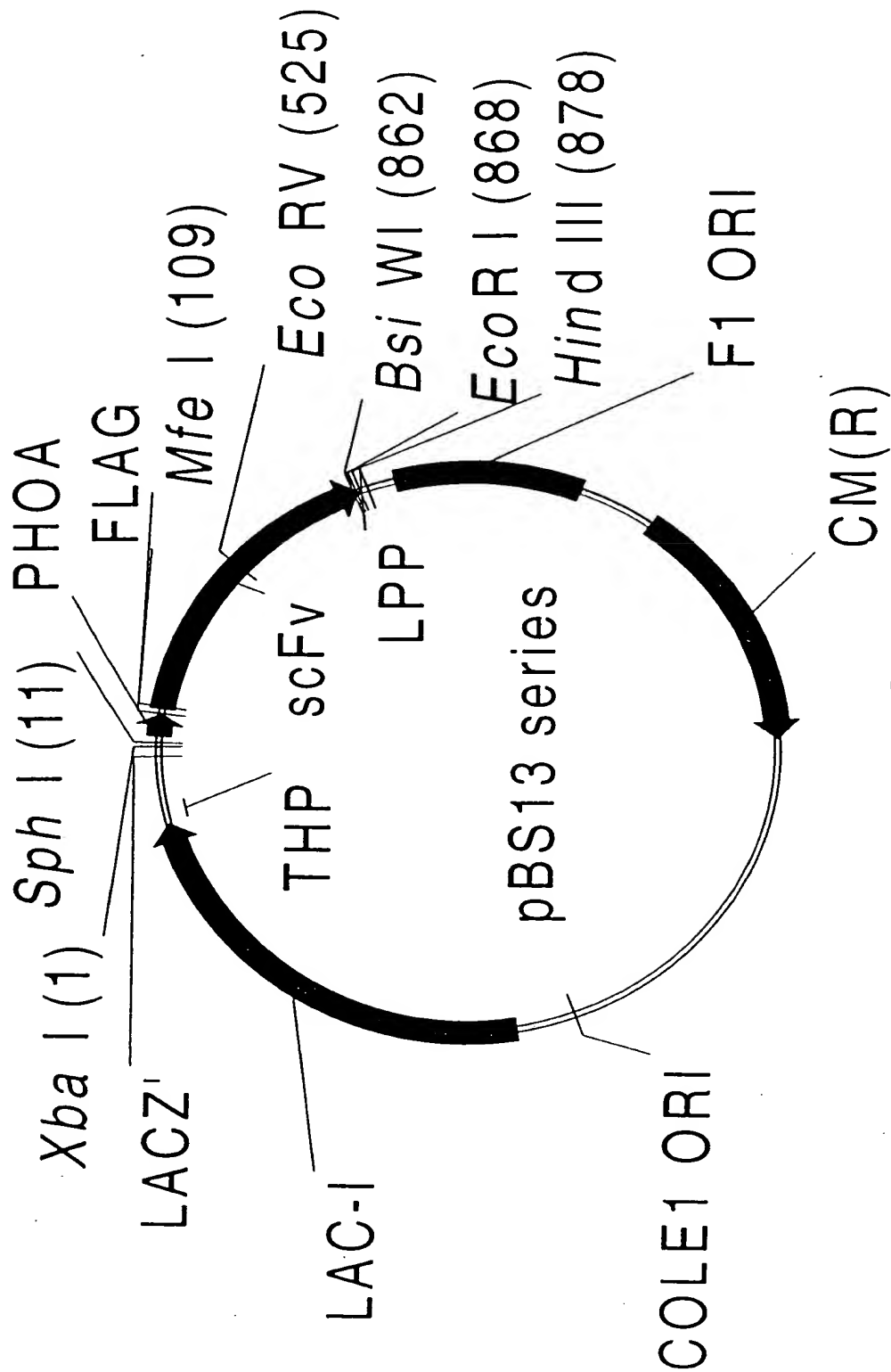


FIG. 39

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

% soluble	$\kappa 1$	$\kappa 2$	$\kappa 3$	$\kappa 4$	$\lambda 1$	$\lambda 2$	$\lambda 3$
H1A	61%	58%	52%	42%	90%	61%	60%
H1B	39%	48%	66%	48%	47%	39%	36%
H2	47%	57%	46%	49%	37%	36%	45%
H3	85%	67%	76%	61%	80%	71%	83%
H4	69%	52%	51%	44%	45%	33%	42%
H5	49%	49%	46%	67%	54%	46%	47%
H6	90%	58%	54%	47%	45%	50%	51%

Total amount compared to H3 $\kappa 2$	$\kappa 1$	$\kappa 2$	$\kappa 3$	$\kappa 4$	$\lambda 1$	$\lambda 2$	$\lambda 3$
H1A	289%	94%	166%	272%	20%	150%	78%
H1B	219%	122%	89%	139%	117%	158%	101%
H2	186%	223%	208%	182%	126%	60%	97%
H3	50%		71%	54%	59%	130%	47%
H4	37%	55%	60%	77%	195%	107%	251%
H5	98%	201%	167%	83%	93%	128%	115%
H6	65%	117%	89%	109%	299%	215%	278%

FIG. 40A

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

Soluble amount compared to H3κ2	κ1	κ2	κ3	κ4	λ1	λ2	λ3
H1A	191%	88%	121%	122%	26%	211%	76%
H1B	124%	95%	83%	107%	79%	142%	59%
H2	126%	204%	139%	130%	66%	50%	70%
H3	63%	-	81%	49%	69%	143%	61%
H4	40%	47%	49%	54%	95%	55%	125%
H5	69%	158%	116%	80%	72%	84%	84%
H6	85%	122%	87%	77%	162%	162%	212%
	McPC						
soluble	38%						
%H3κ2 total	117%						
%H3κ2 soluble	69%						

FIG. 40B